The·Northwestern·Miller

MILLING PRODUCTION SECTION

IN TWO SECTIONS—SECTION TWO

MAY 10, 1944

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George S. O. Smith, Superintendent, Valier & Spies Milling Co., St. Louis, Mo.

He Accepted the Challenge

GEORGE S. O. SMITH, superintendent of Valier & Spies Milling Co., St. Louis, Mo., and vice president of the Association of Operative Millers, became a miller "because," as he says, "it seemed to me that milling was an interesting science that would take a long time to master. I decided that the milling industry could use me or that I could use it."

That approach, it must be agreed, is a logical and analytical approach to one's choice of a life vocation. Some men, it has been said, achieve greatness; others have it thrust upon them. That same thought can be expressed about George Smith's association with the milling industry. He did not have his vocation thrust upon him. He chose it because it seemed to him that the unsolved problems connected with the art of milling were a challenge to him. He accepted the challenge. And through the years of his association with the industry, flour milling has continued to be a challenging pursuit. Milling that "was good enough for father" is not good enough for this superintendent whose search for new and better ways of doing an age-old job is constant and has been one of the principal reasons for his rise and present position in the industry and among his fellow millers.

It could be argued that George Smith is a miller today because, as a boy, he liked to fish. The universal favorite fishing hole among boys has been and will continue to be down by the dam. Mills usually were by dams. There was a mill by a dam in George Smith's case and his boyish curiosity when the fish were not biting led him (Continued on page 6a)

Volume 218 • Number 6

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Canada's Flour Experiment Fails

★ ★ ★ ★ ★ ★ ★ ★

Long Extraction Does Not Supply Needed Vitamins for Proper Nutrition

By A. W. Alcock

Chief Chemist, Western Flour Mills Co., Ltd.

AN examination, in the light of our present knowledge and experience, of the evidence which led government officials to accept long-extraction flour as a means of increasing the amounts of the B vitamins in Canadian diets, will show that much of that evidence was based on error and much consisted of opinion which has become less and less tenable with the passage of time.

The authorities on nutrition who lent their support to the joint proposal of the Department of Agriculture and the Department of Pensions and National Health, which they described as of great importance to the well-being and war effort of the nation, buttressed their position with arguments now known to need considerable qualification. They assumed that the B vitamins accompanied one another in relatively fixed proportions and, indeed, used thiamine determinations as a means of measuring the so-called "vitamin B complex." Since thiamine content increased with lengthening flour extraction it was thought that all the B vitamins increased in like proportion. This is now known to be untrue.

Another error followed from this concept of the "vitamin B complex." Because wheat was known to be a rich source of thiamine, it was considered to be rich in the six, seven or eight substances variously classified as B vitamins. One authority definitely stated that wheat contained quite large amounts of riboflavin whereas its riboflavin content is only 0.5 mg per lb. Another claimed that Canadian wheat was rich in thiamine, riboflavin, nicotinic acid, pyridoxine, pantothenic acid, para-amino benzoic acid, inositol and biotin, though actually little, if anything, was known about the amounts of most of these substances in Canadian wheat and its products, and even now we do not possess sufficient data to speak with very much assurance about more than three of them.

Such errors were coupled with certain arguments for which no evidence existed then and for which none has been accumulated in the intervening period of over 2½ years. It was supposed, quite wrongly in the view of other authorities, that since clinical cases do not exhibit a deficiency of thiamine alone, but rather deficiencies of several vitamins, so the subclinical, or borderline, thiamine deficiency revealed by dietary surveys, must also be accompanied by deficiencies of the other B vitamins. As a matter of fact, no cases of multiple deficiencies in human beings, involving more than four of the B vitamins, have yet been found, and the administration of the fourth member of this group, pyridoxine, or B_6, has proved of value only in cases of most extreme malnutrition. Because of its instability to heat, losses of thiamine during cooking are relatively greater than is the case with other B vitamins, a fact which leads many nutritionists to believe that chronic borderline thiamine deficiency can exist uncomplicated by deficiencies of the other members of the group. Much of the thiamine deficiency, however, *is* associated with inadequate intakes of nicotinic acid and riboflavin, but it has now been established that the use of long-extraction flour of the grade advocated in Canada can do little or nothing to make good the dietary shortages of these two vitamins.

One of the nutritionists, on the basis of animal experimentation, and of clinical evidence involving subjects suffering from severe multiple deficiencies, expressed the opinion that the addition to Canadian diets of one or two members of the B group of vitamins in pure form would lead to harmful results as a consequence of the failure to furnish other members of the group "in balanced quantities." Such fears, never widely felt, have since been largely, if not completely, dispelled by the experience in other countries with flour enriched with (a) pure thiamine, (b) with thiamine and nicotinic acid, and (c) with thiamine, nicotinic acid and riboflavin.

ARGUMENTS NOT SUPPORTED BY EVIDENCE

Thus, practically all the arguments advanced by the government's advisers on nutrition in favor of long extraction flours and in opposition to the use of pure vitamins, lacked the support of scientific evidence. We still require information as to which of the B vitamins besides thiamine, riboflavin and nicotinic acid are required in human diets, which of these are lacking in Canadian diets, and which of the deficient vitamins can be provided in significant additional amounts by lengthening the flour extraction to about 80%, before the preference for the present policy over the enrichment of standard white flour with pure vitamins can be said to rest on anything better than vague opinion.

Officials of the Department of Pensions and National Health were also influenced by some misconceptions. Thus, they believed, on what ground it is impossible to say, since the belief was contrary to the published evidence, that bakers in the United States were dissatisfied with flour enriched with pure vitamins, and were demanding long-extraction flours. According to their view the American flour enrichment program was about to be discarded in favor of something patterned on the Canadian proposals. Since then, of course, the enrichment of American flours has been greatly extended, and this has been done after exhaustive inquiries, and with full scientific advice and support. In addition to this, they formed an exaggerated opinion of the strength and character of the opposition in Great Britain to the fortification of flour with pure thiamine. After nearly three years, the flour shipped from Canada on orders from the British Food Ministry is still being fortified in this manner.

FLOUR MILLS ENCOUNTER DIFFICULTIES

Another mistaken belief, by which those without industrial experience were led astray, was that new procedures would make it possible for all well-equipped Canadian mills to produce long-extraction flours which, because of their uniformly good color and baking qualities, were expected to prove generally acceptable to both household users and commercial bakers. It was soon shown that the method of dry milling advocated by the Department of Agriculture was quite impracticable, and as will be seen from the following discussion, subsequent experience with long-extraction flours has done much to justify the refinement of flour to modern commercial standards.

PUBLIC WOULD NOT BUY THE FLOUR

It will be recalled that after a meeting of millers, bakers, nutritionists and Dominion government officials, the specifications for vitamin B white flour requiring a minimum of 400 I.U. of B, per lb, with a temporary tolerance of 10%, were laid down in January, 1942. The regulations governing the sale of this flour and the bread made from it became effective the following April.

During the preceding 10 years surveys had revealed the existence of widespread dietary deficiencies, while improved analytical methods had exposed the nutritional shortcomings of white flour and white bread. The gradual accumulation of this evidence had led to a keen desire among millers and bakers for some means of repairing the undesirable consequences of their activities, and they were ready to welcome any procedure which would gain for their products the support of scientific and medical opinion without reducing their acceptability to consumers. Unfortunately vitamin B white flour was a compromise which satisfied no one. The publication of the specifications immediately brought complaints from a number of Canadian nutritionists that the vitamin content had been set too low. The millers, on the other hand, objected that the vitamin content was too high to enable them to produce a flour with a reasonable chance of market success. Their long experience in merchandising wheat products covering wide ranges of granulation, color, baking qualities and price convinced them that a flour carrying 400 I.U. of B_1 per lb would fail to meet the requirements of their customers. The truth of this was soon apparent.

In spite of the fact that vitamin B white bread bore the government stamp of approval, possessed an artificially created monopoly in the field of what may be called "vitamin breads," and was supported by an extensive advertising campaign conducted by the baking industry, sales of the product dropped to a low level within a few weeks after its introduction, and have never since shown any signs of recovery. As it became more clear that the bread possessed nothing to recommend it to public favor, reports were received regarding the unsatisfactory bakeshop performance of the flour. A relatively low grade flour, in which the prime requisite is not baking quality but vitamin content, is bound to be more variable than the standard bakers' flours with respect to bakeshop performance and in those other characters by which flours are usually judged.

Members of the Canadian National Millers Association also supplied dealers in certain districts with vitamin B white flour for retail distribution—an experiment which turned out to be a complete failure, for, as the millers had predicted, the flour proved to be even less suitable for general household baking than for the production of bread in commercial bakeshops.

In August, 1942, the Canadian National Millers Association submitted a report to Dean Shaw, of the Department of Agriculture, summarizing the results of their first four months' experience with the flour. In this report they expressed the opinion that the use of vitamin B white flour in bakeshops was not likely to be appreciably extended, that it would never enjoy "the smallest public acceptance" as a household flour, and that if any serious desire existed to increase the vitamin content of Canadian diets, consideration should be given to the enrichment of flour with pure vitamins.

THE CONFERENCE OF JANUARY, 1943

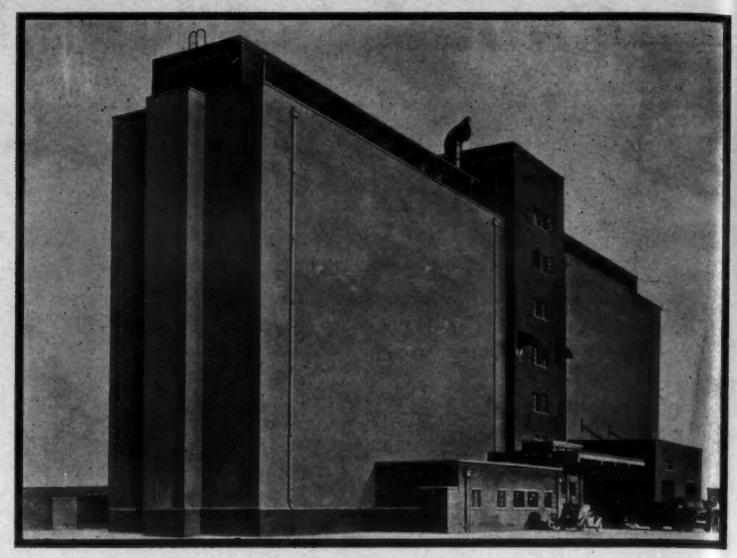
This report, as was the case with independent studies leading to similar conclusions which were published in the trade journals, failed to convince government authorities. They attributed the commercial failure of the flour to avoidable variations in the product. With this idea in mind, Dr. Newman called another meeting of millers, bakers, nutritionists and government officials in January, 1943, for the purpose, as he put it, of deciding how vitamin B white flour might be more closely defined with the object of preventing the distribution of any substandard product. He expressed the hope that after nine months' experience, the industries' representatives would be able to tell him what was wrong. In response to that invitation, representatives of the organized millers, with the general support of the bakers present, advised Dr. Newman of their firm conviction that (1) a flour containing more than 0.50% ash and between 150 and 200 I.U. of B_1 per lb, on a 15.0% moisture basis, would not prove generally satisfactory for bakeshop use, and (2) that there was little hope of persuading the housewife to adopt a flour appreciably lower in grade than the present top patent having an ash content of 0.40% or lower, and containing about 75 I.U. of B_1 per lb. If these flours were too low in vitamin content to satisfy the nutrition-

(Continued on page 12a)

Drying Grain in Great Britain

By L. F. Broekman

Of The Northwestern Miller Staff, London



Exterior view of a grain drying plant showing loading docks for trucks

IN order to enable the greatly increased crop of British home-grown wheat to be dried and stored to the best advantage, and insure its condition when milling facilities can absorb it, the Ministry of Food decided to construct a number of grain elevators, each with storage capacity for 180,000 bus of wheat, to be situated in the various main wheat growing areas of the country, and to be equipped with drying plants for the drying of the newly harvested grain prior to storage.

The design of all the buildings follows a standard pattern, but permits of slight modification to suit individual site conditions.

Each elevator building consists of a central brick-built working house, with a steel structural frame and reinforced concrete floors, flanked by two wings, one comprising 12 and the other 14 reinforced concrete bins in two rows, having a penthouse constructed of brickwork round a structural steel frame to house that part of the running gear feeding the bins.

The bins are built over a reinforced concrete slab, which also carries the steel plate hoppers. These hoppers have provision for the ventilation of the stored grain, and the bins are fitted with temperature recording apparatus to indicate the temperature of the grain at various levels in each bin. These grain temperatures are indicated on an indicator board in the silo laboratory.

The facilities provide for the following operations to be carried out at one and the same time:

1. Intake of bagged grain from road vehicles, in two separate streams, each with a capacity of 750 bus per hour, with distribution of the grain to any bin in the elevator. Alternatively, the intake of bagged grain from rail trucks at 750 bus per hour, and from road vehicles also at 750 bus per hour.

2. Collection from any bin to feed the dryers, and back to any bin.

3. The loading-out from any bin, either in sacks or bulk, to road or rail at the same time.

Turning over from bin to bin can be effected as an alternative to either of the intake streams or to loading-out.

A special feature of the plants is that all spouts and bin hopper slopes are inclined at not less than 45°, to suit the handling of wet grain, thus enabling this to be stored in any bin as received from farms, and immediately fed to the driers.

Each silo installation is fitted with telephone communications throughout, and is well lighted so that the work of the machines is under easy observation.

INTAKE FROM ROAD VEHICLES

The intake hoppers, four in number, are set in the intake platform 3′4″ above ground level to suit the height of road vehicles. Each pair of hoppers is connected to a separate intake stream, providing the two separate streams mentioned previously. The provision of road intake hoppers in pairs is with a view to avoid loss of time in the withdrawal of empty, and backing-in of loaded, vehicles.

To avoid deep excavation, spiral conveyors collect from each pair of hoppers and discharge into two elevators. Each elevator feeds an Avery automatic weigher with 500-lb tipping capacity, complete with hand-operated residue weighing and feed control mechanism. These weighers are housed in a special warehouse in the intake platform, so that the weight of grain received can be quickly and readily checked.

This view shows the heaters for the pre-heating sections of the dryers.

From the weighers the grain is delivered to two short elevators feeding two Apex rubble separators (complete with aspirating leg), in which the unthreshed heads, straws and rubble are removed. After passing through the separators the wheat is delivered to the main elevators by means of which it is elevated to the top floor of the building, for distribution by spiral conveyors to any of the storage bins.

DRYING

Grain can be withdrawn from any bin or bins in the silo into any of the four spiral conveyors below these bins. These deliver to an elevator specially reserved to feed the dryers, above which is a balance bin of liberal dimensions and capacity, and between this bin and the dryer columns are fitted two power driven BQm type Robinson feeders, for regulating the feed to each of these dryer columns. The drying plant consists of Robinson's standard MOm type dryer in two separate units, with a total nominal capacity of 360 bu per hour when extracting 6% of moisture from wheat with a moisture content of 22%, and drying to 16%. When drying wheat with a lower initial moisture content, the dryer works at a correspondingly higher capacity. The facilities provided are such that the drying plant operates night and day, while the operations of intake and loading-out proceed independently during daylight hours.

The balance bin feeding the MOm dryer is provided with two diaphragm controls for the automatic stopping and starting of the motors driving the conveyors feeding this bin to prevent any flooding or choking of the plant that may be caused by fluctuation of feed or lack of care in the manipulation of control slides by the operatives. Moreover, the BQm feeder below this bin and immediately preceding the MOm dryer has incorporated a slide and mercury switch to operate a klaxon siren to give audible warning to the operative in the event of the main bin, from which wheat is being drawn, running empty.

Each column of the MOm type dryer contains three sections, the first for preheating, the second for drying and the third for cooling the wheat.

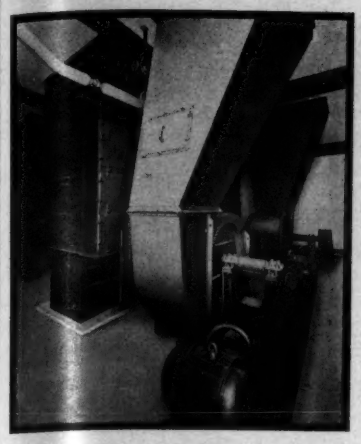
The first or preheating section of each column is provided with its own separate air heater, and hot air fan and the well-known Robinson hot air return circuit is employed. By means of this return air circuit the grain is first sweated and the pores of the skin opened in the saturated atmosphere at any predetermined temperature at which no damage can be done to the milling properties of the wet wheat. This predetermined temperature is automatically controlled by Sarco thermostat.

On passing into the drying or second section the grain, in a sweating condition, gives up its natural moisture much more readily to hot dry air which has a correspondingly high saturation point. A further advantage of the preliminary sweating of the grain, where very moist wheats have to be treated, is that the moisture content is reduced before the wheat enters the drying section, thus allowing higher air temperatures to be used in the subsequent drying. The second or drying section of each column is also provided with its own separate air heater and hot air fan, and the air temperature in this drying section is independently and automatically controlled at any predetermined temperature by Sarco thermostat.

The flow of air is in an open circuit, fresh air being drawn in by the fans and after being heated is circulated through the grain where it rapidly absorbs the moisture now ready to be given up and carries this to atmosphere outside the building.

The third or cooling section of each column is again provided with its own separate fan which draws cold air through the grain as this passes through this last section of the column. This air is blown to an expansion chamber incorporated in the construction of each nest of bins. By blowing cold air only into these expansion chambers the accumulation of hot, damp dust in the chambers is avoided. From these expansion chambers, where dust is deposited, the air is discharged through revolving cowls to atmosphere.

The wheat passes evenly down the columns, the rate of flow being automatically controlled and adjusted to the rate of feed entering the balanced feed



A view of the second floor of the dryer house showing fan and layout to drying section of columns by means of independent motors and V-belt drives.

units because of the interlocking of the feed and delivery hoppers. The dryer, therefore, automatically adjusts itself to the rate of flow required and regulated by the adjustable power driven BQm feeders immediately above the columns.

From the dryers the wheat passes to a dried grain elevator which, in turn, discharges to the conveyors for delivery to any storage bin.

The grain can be withdrawn from any bin into the corresponding conveyor below, when this is not in use for drying or loading-out, and delivered into either of the main intake or loading-out elevators for redistribution to any vacant bin.

LOADING-OUT

Any one of the conveyors below the bins, when not in use for delivery to the dryers or for turning over, can be used for collecting from any bin and conveying to loading-out conveyor over one wing of the elevator, to feed any of four special loading-out bins. From these loading out bins the grain is spouted to four Avery automatic sacking-off weighers, located over the edge of the loading platform. This platform is 8' above ground level to facilitate the transfer of the filled sacks direct to rail trucks or road vehicles. The sacking-off weighers are of the suspended type, weighing out in units of 252 lbs at the rate of three sacks per minute. For loading-out in bulk the weighers are by-passed by means of swivel spouts, which swing over the vehicles that are to be loaded.

The conveyors are of the continuous belt type, with mild steel shafts running in grease lubricated bearings. They are provided with silent spiral gear drive, totally enclosed in cast iron gear cases running in an oil bath and mounted on ball bearings. In spite of their size and length these conveyors when empty can be easily turned by hand and are completely silent in operation. The troughs are of sheet metal construction, with easily removable dust-tight covers.

A view in the basement showing spouting and elevator boots with the independent drives through silent spiral gears to conveyors.

MOTORS AND DRIVES

All the machines and accessories are driven by independent motors through vee belts, and reduction gears where necessary. This completely eliminates all intermediate transmission gear, thus simplifying the arrangement and economizing in power consumption and provides greater passageway round the machines. As only the motors needed to drive machines and accessories in operation are running at any given time, this all-motorized layout gives a minimum power consumption. All the motors are of the totally enclosed fan cooled squirrel cage rotor induction continuously rated type, and all starters are fitted with no-volt and three overload releases.

The steam supply for the air heaters is provided by an 8' 6" x 18' hand-fired vertical Cochran boiler, having an easy steaming capacity of 5,000 lbs per hour, at 100 lbs per sq in pressure. One boiler feeds all the heaters in each installation through adjusting reducing valves. Boiler and pipework are suitably lagged, and the whole arrangement convenient and compact to give an efficient installation.

The buildings have been designed by the British Ministry of Works, under the supervision of Nelson Size and C. Bristow.

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The BARN RAISING

The American farmer has always believed in and practiced co-operation. When crops were to be harvested or heavy chores to be done he always felt free to call on his neighbors for help, holding himself ready for such calls in return.

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George S. O. Smith

(Continued from page 1a)

to visit with the miller and "explore" the mill. The mill was the Bowersock mill in Lawrence, Kansas.

That was George Smith's introduction to milling. It was not a case of answering a blind want ad in the help wanted columns of a newspaper. He went into the vocation of milling deliberately because he thought that those unsolved problems should keep him mentally alert; and that milling probably was an interesting life work.

His first experience around a mill was with a construction company, helping build circular concrete silos and elevators. Later, he got a job working on machinery installations, then on up the scale he went, this time operating some mill machinery. For a while he had charge of an elevator, binning, grading and blending the mix for a 1,500-bbl mill.

The same urge that prompts little boys to take alarm clocks apart prompted Mr. Smith to gain an even more close understanding of milling, so he quit his job as elevator man and attached himself to the business end of a broom.

From sweeper he went to oiling, then to the packing floor, back to the roll floor as a roll tender, and so on. His occupations included spouting and maintenance work. Being assigned all the various jobs in a mill was Mr. Smith's idea—not his superintendent's—because he felt that he could have more knowledge of the over-all job of milling, or "to get the 'feel' of a mill," as he put it.

After that grounding in the fundamentals of milling, Mr. Smith took time out to go to Kansas State College and take some courses in milling. He took the course in experimental milling, another in baking analysis, another in routine mill analysis. Then later, back in a mill, after working the "graveyard" shift, he would spend five to six hours each day in the mill laboratory doing routine analyses.

Many of the samples of flour that he analyzed had been milled by him. "When I analyzed those samples and had to report to the head office that occasionally one would be slightly 'off,' there was nothing or no one else to blame but George," he recalls, "and you can bet your bottom dollar that it was up to George to straighten things out."

Shown in the picture with Mr. Smith (center) are I. S. McWilliams (left), head miller in the Valier & Spies "A" mill, and S. J. Dombeck (right), head miller in the "B" mill.

Mr. Smith indicated that it is his firm belief that if millers and cereal chemists had a better, a more complete, understanding of each other's jobs and each other's problems, both groups would be better fitted for their respective jobs.

"It was while I was devoting myself to both the mill and the laboratory that I reached the conclusion that the millers' and the chemists' problems were one and the same," he said, "and whenever I walk into a laboratory or go to a new job, it is with the understanding of what the laboratory problems are and the intentions are for the best interests of all concerned."

George Smith's career in milling had its start in the Ismert-Hincke mill in Kansas City. He later helped to in-

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stall machinery in the Midland mill which was under construction and stayed on at this plant, working as smutter, spouter and miller. He then went to the Ross Milling Co. under Grover Johnson's supervision.

"It was under Grover Johnson that I learned a lot about 'human engineering,'" Mr. Smith said. "I learned that the other fellow is entitled to a boost or a bit of help whenever you can give it to him, whether or not it be needed, expected or appreciated at the time." Mr. Smith's ability to get along with his fellow workers, his practice of rewarding a man with a pat on the back and a bit of praise, and his sincere desire to be of as much assistance and guidance,—all those traits are well known and his friends will tell you that those traits have contributed much to George Smith's popularity and his success.

He makes a point of attending any technical lecture or demonstration that pertains to any phase of mill management or operative milling. He has enrolled in courses under leading industrial personnel management experts and takes a keen interest in labor management and relations.

He quit his job as second miller at the Midland Flour Milling Co., to become superintendent of the Higginsville (Mo.) Flour Mill, owned by the Dixie Portland Flour Co., of Memphis, Tenn. From there he went to the Lexington (Neb.) Mill & Elevator Co., and in 1938 he resigned from that position to take charge of the plant of Valier & Spies Milling Company, St. Louis, Mo.

It was while working around Kansas City that he organized a night school for millers in North Kansas City, with the assistance of local, state and national educational officials. The school was organized under the Smith-Hughes law which provided assistance for vocational schools. It received the support of leading mill owners and mill managers, also.

Mr. Smith recalls that at that time (1936), milling was "on rock bottom." There was too much milling capacity for the amount of business which meant not enough running time and no steady work for the millers; such conditions offered no incentive for mill employees to better themselves by learning more about milling. The operative side of the industry was in a rather depressing state of affairs as far as many millers and cub millers were concerned.

"The amazing thing about the night school," Mr. Smith recalled, "was that attendance was regular and that fathers brought their sons and in some cases, the sons brought their fathers. The ages of our students ranged from 15 to 70 years. I personally know that today, most of the younger men who attended the night school for millers back in 1936 are now holding down responsible jobs in the industry and, furthermore, the manpower shortage in the industry today would be more acute in the Southwest if a great many of the men back in the 'dark days' had been allowed to drift into other lines of work, instead of being given some encouragement, further training, and a faith and pride in their jobs."

That same enthusiasm and interest in milling that Mr. Smith exhibited when he organized the night school for millers has been carried over into the Association of Operative Millers. He has been a member of the association continuously since he was eligible for membership and served for many years as secretary of District No. 2 (Kansas City and vicinity). He also has been vice chairman and chairman of that district and has held offices in the District No. 5 (St. Louis and vicinity) group. At present he is general chairman of the 1944 convention committee. District No. 5 will be host to the convention next month.

He is a convention "regular" and is a familiar personage at the association's annual conclaves. When asked which of the many conventions stood out in his memory as the "best," he replied that "all of them, to me, have been outstanding" and that he never has come away from one without a feeling of satisfaction in time well spent in getting the benefit of the knowledge and experience of others and of the pleasant visits with his associates.

The Smiths have one child—or young man, now—who is 18 years of age and soon will be in the armed forces of this country. He will be graduated from high school this spring; has majored in mathematics, English and science and earned his letter on his school's football team. He hopes some day to be an officer in the Marine Corps.

Mr. Smith is a member of the board of his church in St. Louis. He has none of the "vices" of the average man: he does not drink, smoke, chew, or "spit in the corners," he adds.

If one has been at the same table with Mr. Smith at a dinner, he probably knows his hobby. It is collecting autographed menu cards. "Some day, when I am old and have to take soup through a straw or live on the vitamin capsules we hear so much about, I expect to get those cards out and check over the signatures and enjoy the memories of pleas-

(Continued on page 15a)

— Obtainable Since March 1st Without Direct Application to War Production Board —

Riboflavin—Vitamin B_2, sometimes called G—was first isolated from whey in 1933. Little was known about it then, but chemists sought a method for making it synthetically, since anywhere from 5,000 to 11,000 quarts of whey were needed to yield one single gram.

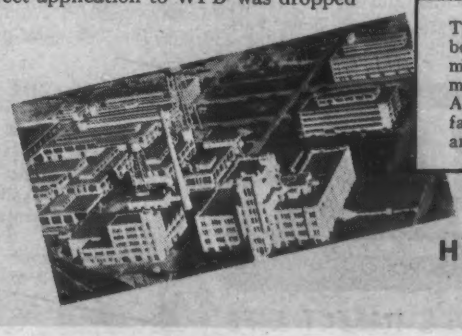
Two years later Paul Karrer, in collaboration with the Hoffmann-La Roche Scientific Laboratories, announced the first synthesis of riboflavin. Estimated cost of the first four grams produced was $10,000. When chemists then tried to carry out this synthesis on a commercial scale they found that few vitamins had given more baffling problems, but six years later (in 1941) Roche persistence won out, producing an improved industrial synthesis which is the basis for our present operations.

War shortages delayed really broad scale production for many more months but by October 1st, 1943, the supply situation permitted the Food and Drug Administration to require B_2 in enriched flour. From that date, too, every loaf of white bread has, by Government order, had to contain a specific amount.

Supplies, while still allocated by War Production Board, appear ample for feed purposes. In fact, all purchasers of B_2 follow a greatly simplified procedure when ordering, since March 1st. Direct application to WPB was dropped at that time. You simply send purchase order for each month's requirements to us by the middle of the preceding month, stating the amount needed for each type of product, and we notify you of WPB's approval two weeks later. Even this routine isn't necessary to users of 100 grams or less per month—we can give them immediate shipment at any time.

The first reported use in the animal feed world of pure crystalline riboflavin (prepared from liver) was in 1935, the year of its synthesis. Other scientific reports stressing its growth-promoting properties followed. In 1938 the symptoms of riboflavin deficiencies in chicks were described and it was shown these could be prevented by the use of the crystalline vitamin. In the same year reports on hatchability studies were published by different groups of scientific workers. By now there are almost 100 scientific reports published in the United States alone, the B_2 requirements of various types of birds have been measured, and the background for the different percentages of riboflavin in different feeds has been well established.

For further information and quotations write to our Vitamin Division.



The aerial view shows some of the 21 buildings in beautiful 100-acre Roche Park. From this ultra modern plant pour out Vitamins by the Tons to meet military, civilian and feed requirements of America and her Allies. 'Roche' Riboflavin is manufactured with the special requirements of the flour and feed industries in mind.

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Helpful Pointers About

Changing From Soft to Hard Wheat

By J. N. Chisam

J. N. Chisam

EDITOR'S NOTE.—*The following article was presented by Mr. Chisam, superintendent of the M. D. King Milling Co., Pittsfield, Ill., as a paper before the meeting of District No. 5, Association of Operative Millers, in St. Louis on April 29.*

MILLERS will approach the change of grinding hard wheat on a mill designed for soft wheat from one of two angles—a complete change of the mill for grinding hard wheat only, or keep the mill flowed about the same as it is, and grind an occasional few thousand sacks of hard wheat flour as the orders come in. In either case, there are a number of problems we must solve if we are to do the job with skill and profit.

A thorough blending of the hard wheat mill mix will be just as important as was the blending of the soft wheat mix. So often when only a few cars of hard wheat are to be milled, one bin is allotted in the elevator for hard wheat; in that case, the mill will receive the wheat almost car for car as the elevator did. This wheat will not be uniform and will cause a lot of grief in its many changes while being milled.

In cleaning hard wheat on cleaners set for soft wheat, the miller will need to be sure that he is not breaking a lot of grain, or pulling small grains to screenings. This will not only hurt the yield, but lower the protein of your mill mix for these small grains are high protein.

After properly cleaning the wheat, we face the major problem, and I know it is a tough one—that of tempering hard wheat properly with the tempering bins usually found in a soft wheat mill. If you are lucky, or wise, you may have a wheat conditioner, if so, your tempering problem will be simplified, but regardless of how it is done, the correct amount of moisture will have to be inside that hard wheat when it gets to the first break roll, if we expect to do a good job of milling. If you are going to grind a family hard wheat flour from a 12% protein wheat the correct temper will be easy to get, but let's say that the mill mix is a 14% protein dark hard to be milled into army flour; the flour to have a moisture content of 13.50% at the packer. All this 13.50% moisture will be needed inside the wheat if the middlings made from it are to be ground.

Set the first break governor back a few bushels when the hard wheat reaches the first break roll, for the average soft wheat mill will not grind as many bushels of hard as it did of soft wheat.

The break rolls will have to be opened quite a bit to get about the same extraction as was being milled on soft wheat. I like an extraction of 28% on first break, 35% on second break, and 38% on third break, then just clean up the bran on the last two breaks. At this point we meet the next major problem—how to reduce those large hard middlings, which feel like sand to a soft wheat miller. Most mills flowed for soft wheat have plenty of break rolls and break bolting surface, but have not needed as much smooth roll surface as the hard wheat mill. The miller will have to use to best advantage every inch

(Continued on page 15a)

"We would not want to run our mill without the 'Entoleter'!"

This statement was made by a leading miller who has used the "ENTOLETER" continuously since the summer of 1942. Unqualified in its endorsement, it is similar to many comments from operators who have taken time to send us expressions of approval after giving the "ENTOLETER" a thorough try-out in their mills.

In actual operation in scores of prominent mills, over a period of four years, the "ENTOLETER" has proved to be a most economical and dependable method of destroying ALL FORMS of INSECT LIFE in milled products.

The "ENTOLETER" is no substitute for good housekeeping. However, in the cleanest mill, some insect life can get into the product through its presence as eggs or very small larvae in the raw materials, or by its existence in crevices in the mill structure or equipment. The "ENTOLETER" guards the product from infestation from these sources. Applied to key streams and to the finished product just before packaging, it completely destroys any insect life in these materials. In its constant action, it protects both mill and product.

The "ENTOLETER" gives this protection CONTINUOUSLY and at very low cost. Wholly mechanical, it uses no heat, gas or chemicals, and does not change the moisture content of "ENTOLETED" products.

Food materials worth hundreds of millions of dollars were spoiled last year because of insect infestation. Now, when every pound of food is needed, it is more important than ever to protect your products most thoroughly and dependably. Without obligating you, we shall be glad to recommend "ENTOLETER" applications for your specific needs. ENTOLETER DIVISION, The Safety Car Heating & Lighting Company, Inc., 230 Park Avenue, New York 17, N. Y.

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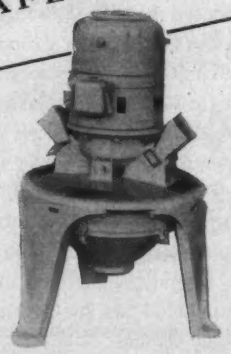

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Write for free copy of our new 6-page Bulletin, entitled "Modern Control of Insect Infestation." It fully describes the "ENTOLETER" and reports on present applications in flour mills and food processing plants.

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CONTINUOUS DESTRUCTION OF ALL INSECT LIFE

St. Louis Will Be Host to Millers For Tenth Time at 1944 Convention

WHEN the Association of Operative Millers meets in St. Louis, June 5-9, for its 49th annual meeting, it will have been the tenth time that city has been host to the millers and their associates. Kansas City runs a close second; the 1943 convention was the eighth for that city.

Other convention cities have been Minneapolis, Milwaukee, Indianapolis, Evansville, Buffalo, Seattle, Cincinnati, Dallas, Denver, Toronto, Niagara Falls, Memphis, Louisville and Detroit.

Conventions of the association have become a tradition in the milling industry. There the millers meet for an exchange of technical knowledge gained throughout the year, to hear reports of research, to renew old acquaintanceships and to make new ones. B. W. Dedrick, the first president, said at the 1933 convention: "This association has been almost wholly responsible for our great advancement in milling, not alone in the mechanics of milling and flour manufacture, but in the growth and use of chemistry as a concomitant to or of milling. The prime objective in the founding of the association was the education and training of the miller."

Those who plan the programs for the annual conventions have adhered closely to that objective.

The idea for a millers' association was born during a millers' strike in Milwaukee, Mr. Dedrick recalls.

"There were 15 or 16 mills in Milwaukee," Mr. Dedrick said, "and the millers went out on strike one summer day in 1877 or 1878, I cannot recall the exact year. I remember well the first get-together of the millers and stone dressers who were on strike. About 30 millers met at the mill-pick shop of the Hetzer Brothers on Third Street. Some of the men sat around on boxes and discussed the situation and the idea of bringing about an organization, somewhat on the union idea.

"The result of that meeting was the formation of an association with Levi Hicks as secretary. I cannot recall the name of the president. This organization existed for three or four years."

Nothing more was done about organizing a millers' association until 1894, when Mr. Dedrick wrote an article setting forth the plan of an organization to be known as the Fraternity of Operative Millers of America. The preamble which Mr. Dedrick prepared for the constitution brought out quite plainly that the organization was not a labor union, but one to further the social and educational welfare of its members. There was some opposition at first to the association since a few millers, and mill managers, mistakenly believed that it was a labor organization. "Wages were to be agreed upon by the mill owner and the miller, the idea being that we could improve ourselves to the point where we could ask for higher wages and better conditions," Professor Dedrick stated.

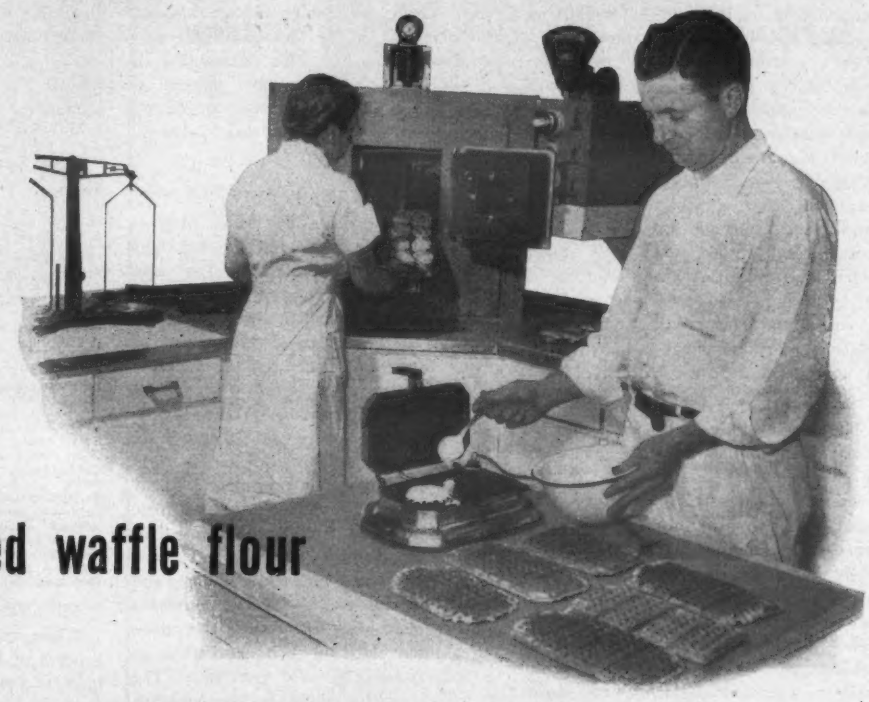
During its first year, the association was approached by representatives of two labor organizations with proposals that the organization join the labor organization. Both proposals were rejected, since the principal purpose of the millers' group was to further the technical knowledge of its members. That purpose, set forth in the preamble to the first constitution, has been adhered to zealously down through the years of the association's existence.

There were pro and con discussions in the trade journals of that time for nearly two years following the publication of the first article by Mr. Dedrick. His articles were published under the pseudonym of "Bryan Darwick" and only a few knew his identity.

After two years of evangelistic work, Mr. Dedrick finally came out under his own name and urged that all who were favorable to the plan vote by ballot. J. M. Mattingly was appointed temporary secretary to receive the ballots and the $3 annual dues. About 150 applicants sent in their membership dues, voted on the name of the society, constitution, seal, badge, time and place of meeting, etc. The name chosen was the Fraternity of Operative Millers; Mr. Dedrick was elected president, J. M. Mattingly was elected secretary, and the first convention was to be held in Chicago on June 24-25, 1896. That action was official, so the association really was organized on Jan. 20, 1896.

At that first meeting in Chicago, there were only a handful of millers present

(Continued on page 13a)



This prepared waffle flour

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Chemistry for the Operative Miller

★ ★ By Dr. C. O. Swanson ★ ★

Kansas State College

Chemical Composition of Feeds and Foods

FEEDS or foods contain five main groups of substances: Proteins, carbohydrates, fats, minerals and vitamins. This is a convenient classification both in discussing chemical composition and nutritional values. Crude fiber is composed mainly of the carbohydrates, celluloses and pentosans. Crude fiber is classed as the least valuable of these substances in feedingstuffs inspection. Manufacturers are required to guarantee that the feed shall not contain more than a given percentage of crude fiber, and not less than a given percentage of other substances. Feeds which have relatively large amounts of crude fiber are classed as roughages or coarse fodders and those which have relatively small amounts as concentrates or concentrated feeds (Armsby, 1917).

SIX GROUPS OF SUBSTANCES IN FEEDS

The usual analysis of feeds by the cereal chemist includes five substances or groups of substances which are determined by specified laboratory procedures. These five are: moisture, ash, protein, fat or ether extract, and lastly, crude fiber, the subject of this article.

The percentage of a sixth group of substances is calculated by difference. After the chemist has determined the percentages of the five constituents, using the specified laboratory procedures, he adds the figures and then subtracts their sum from 100. The remainder thus obtained is the percentage of nitrogen-free extract. The bigger part of this constituent in concentrates is the carbohydrate starch. Roughages also contain considerable starch, but the carbohydrates, celluloses and pentosans, give the distinctive characteristics to this group of feeds.

COMPOSITION OF CRUDE FIBER

Crude fiber consists mostly of cellulose of which there are many forms, ranging from the easily digestible hemicelluloses in flour to the indigestible lignocelluloses of wood. Crude fiber also contains considerable amounts of pentosans and traces of some other organic compounds. The conditions of the determination are such that the percentage of crude fiber includes no mineral or nitrogenous material.

OCCURRENCE OF CELLULOSE

Cellulose is one of the more important carbohydrates in plant materials and ranks above starch in abundance and extent of distribution. The term cellulose can be considered to represent a group of chemical compounds since there are so many forms. Cellulose constitutes the framework of plant tissues. Thus the supporting parts, stems, leaves are principally cellulose. Starch, in contrast, is largely concentrated in the seeds. The outer parts of seeds, however, such as bran and oat hulls, owe their protecting and supporting characteristics to cellulose.

Common forms of nearly pure cellulose are cotton, flax and hemp fiber. Cellulose in wood is combined with other substances called lignin and is designated as ligno-cellulose. Cellulose is insoluble in dilute acids and alkalies and is therefore one of the most inert substances in feeds. This insolubility is the basis of the crude fiber determination and also serves partly to characterize its comparatively low value in feeds.

METHOD OF DETERMINING CRUDE FIBER

The inert nature of crube fiber is readily realized by considering the method of its determination. The value of the results depends on a strict following of the specified directions. The sample used for the determination of crude fiber must first be made moisture and fat free. It is therefore convenient to employ the residue of the sample used for the moisture and ether extract determinations. This residue is first placed in 200 cubic centimeters (near ⅙ liquid quart) of hot 1¼% sulfuric acid and boiled for 30 minutes. This treatment dissolves starch and some other substances but the cellulose and a considerable portion of the pentosans remain insoluble. Filtering is then done on a linen cloth of such close mesh as to retain all the solid particles. The material on the cloth is then washed with hot water until it is free from acid. What remains on the cloth after this treatment is next transferred to 200 cubic centimeters of hot 1¼% sodium hydroxide and boiled for 30 minutes. This treatment dissolves principally the proteins. The material which remains insoluble after these two boilings is recovered by filtering on asbestos fiber in a Gooch crucible and washing with hot water. The crucible with contents is next dried and then weighed. The next step is heating in an ash muffle or furnace until all organic matter is destroyed. The difference in weights before and after burning represents the amount of crude fiber which is calculated as a percentage of the original sample.

The method of the determination shows that crude fiber includes all the substances which resist being dissolved by the treatments with acid and alkali and also remain in large enough particles to be retained on the linen and asbestos filters. The adjective crude is thus an appropriate designation.

CRUDE FIBER AND PROTEIN CONTENT OF SOME ROUGHAGES AND CONCENTRATES

The data in table 1 show the relatively small crude fiber content of concentrates and also the relatively high crude fiber content of roughages and coarse fodders (Henry and Morrison, 1923). The data for protein show less uniform differences between concentrates and roughages than the figures for crude fiber. Thus crude fiber content is (within limits) used to differentiate between roughages and concentrates. Some roughages like the legumes, alfalfa and red clover, contain a higher percentage of protein than several concentrates, but they also contain large amounts of crude fiber. Alfalfa leaves could be classed as a concentrate because of the high protein content and relatively low amount of crude fiber.

TABLE 1

Crude fiber and protein contents of a few roughages and concentrates. (Henry and Morrison, 1923).

	Per cent	
	Crude fiber	Protein
DRIED ROUGHAGES		
Corn stover	30.7	5.9
Sorghum fodder	26.1	7.4
Blue grass hay	28.3	8.3
Mixed grasses hay	28.8	7.6
Timothy	29.8	6.2
Oat hay	28.3	8.4
Wheat hay	24.7	6.2
Alfalfa	28.3	14.9
Alfalfa leaves	12.7	22.5
Alfalfa stems	54.4	6.3
Clover, red	25.5	12.8
CONCENTRATES		
Corn grain, dry	2.0	10.1
Corn bran	9.8	9.7
Cottonseed	22.6	19.5
Oats	10.9	12.4
Sorghum grain	2.0	9.2
Soybean seed	4.3	36.5
Wheat	2.2	12.4
Wheat bran	9.5	16.0
Corn gluten feed	7.1	25.4
Linseed meal, N.P.	8.7	36.9
Red dog flour	2.2	16.8

A FEED CONSTITUENT MUST BE DIGESTIBLE

While crude fiber, as shown by the process of its determination, is the most inert of the six groups of substances in feeds it does have a feed value particularly for such animals as ruminants and horses. To be valuable in a feed, a constituent or substance must be digestible to a greater or less extent. Crude fiber is also associated with substances which carry vitamins. Hence the crude fiber content may indicate a value in feeding beyond what might be inferred from its relatively low digestibility. Feeds which have large amounts of crude fiber also have a bulk value which is necessary for certain classes of animals. These phases are beyond the present discussion.

VALUE OF THE DIGESTIBLE NUTRIENTS

A large amount of research has been done by animal nutritionists to determine the digestibility of feeds both as a whole and also the digestibility of the individual constituents in these feeds. A concentrate or a roughage, generally speaking, is valuable as a feed in proportion to the amounts of digestible nutrients present. Only the digestible nutrients in a feed have value for furnishing energy, for building of protein and repair of body tissue. The nutrients from the feeds are the ultimate source of such foods as meat, pork, fats, milk and eggs as well as energy in animals used for power. The farm animal is a converter of matter and energy into such forms as are useful to man (Armsby and Moulton, 1925). The physiological processes of the animal are also maintained by the digestible constituents in the feeds consumed. As these processes also consume energy, foods for man become more expensive when obtained through the animal as a converter than when eaten directly as wheat flour, rice, vegetables and other plant products.

MEANING OF DIGESTIBILITY

The digestibility of a feed or of constituents in a feed is determined by digestion experiments. Digestibility as here considered does not mean the same as easily digested. An easily digested feed or food is generally one that causes no unpleasant sensations after it is eaten, while a feed or food which causes gastric or intestinal disturbances is considered hard to digest. This phase is outside present consideration. Digestibility as here used denotes the percentage of the feed as a whole, or of any single ingredient in the feed which is so acted on in the digestive tract that it is utilized by the animal for various purposes. These are for energy in work animals, such as horses and mules, production of foods such as meat, pork, fats, milk and eggs.

DETERMINATION OF DIGESTIBILITY

A digestion experiment determines the balance between the intake of total nutrients in a feed and the outgo of indigestible matter in the feces. The total dry matter and all its different constituents in a feed eaten by an animal over a definite period of time are determined by weighing and chemical analysis. The dry matter and its different constituents voided in the feces are similarly determined. It is assumed that the feces are equivalent to the undigested constituents in the feed and for practical purposes this is essentially correct.

Herbivorous animals are suitable for the determination of the percentages of the digestible constituents in a feed. This must first be done with a single feed, and herbivorous animals are adapted to subsist on single feeds. The following example is adapted from Armsby (1917) and will show the essential parts of a digestion experiment. A steer was fed 8.1 lbs clover hay per day for three weeks. The average daily intake of dry matter in the hay was 6.9 lbs and the average daily outgo in the feces was 2.8 lbs. The difference between the amount of dry matter taken in and the dry matter excreted was thus 4.1 lbs. These 4.1 lbs represent the amount of dry matter in the clover hay actually digested and by calculation is 59.4% of the 6.9 lbs taken in. This is therefore the percentage of digestibility of the dry matter in the clover hay. The figure 59.4 is also called the coefficient of digestibility.

The digestibility of any of the constituents in clover hay such as protein or crude fiber is obtained from the same experiment. The percentage of crude fiber in the clover hay fed the steer was 28.6. The average daily intake of crude fiber in the clover hay was 2.33 lbs and the outgo 1.16 lbs. The difference of

1.17 lbs was the amount of crude fiber digested and is near 50% digestibility. The digestibility of the other constituents was obtained in the same manner.

The determination of the digestibility of constituents in concentrates is somewhat more complicated since for herbivorous animals such feeds cannot be made the sole ration. The digestibility of a convenient roughage which can be the sole ration is first determined as described. Then the concentrate whose digestibility is to be determined is fed together with this roughage. The same animal is used for both experiments. From the digestibility of the various constituents in the total ration and the previously determined digestibility of the roughage, that of the concentrate is calculated by difference. By this method, the digestibility of the various concentrates and their constituents has been determined.

With animals, such as hogs, whose sole ration may be a concentrate, the digestibility of a concentrate is usually determined by the single method such as used for roughage with herbivora. Data in table 2 give the percentages of digestibility of the total dry matter in some concentrates and roughages and also of crude fiber (Henry and Morrison, 1923). By combining such figures as those in tables 1 and 2, the pounds of digestible crude fiber as well as other constituents may be calculated for any quantity of feed as has been done by students of animal nutrition.

TABLE 2

Percentages of digestibility of dry matter and of crude fiber in some dried roughages and concentrates (Henry and Morrison, 1923).

	Per cent	
	Dry matter	Crude fiber
DRIED ROUGHAGES		
Corn stover	57	66
Sorghum fodder	58	61
Blue grass hay	56	66
Mixed grasses	61	63
Timothy	55	50
Oat hay	54	52
Alfalfa	60	43
Red clover	59	54
CONCENTRATES		
Corn	90	57
Cottonseed	66	76
Oats	70	35
Soybeans	88	75
Wheat, ground	87	59
Wheat bran	65	31
Wheat middlings, flour	82	36
Rice bran	61	25

NO SPECIFIC ENZYMES FOR CELLULOSE

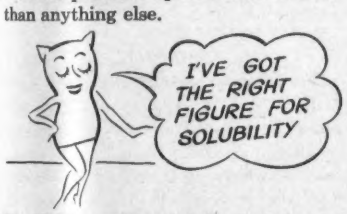
The changes which take place in foods or feeds during digestion are due to enzymes. These are organic catalysts which are produced in the animal body and are necessary for the process of digestion. The various susbtances in feeds are composed of relatively large and complicated molecules. These must be broken down into simpler forms which can be used for the various biological processes in the animal body. Separate enzymes exist for the various groups of the constituents in feeds. The protease enzymes, pepsin, trypsin and erepsin act upon the proteins. The amyloses (diastases) act upon starch, the lipases act upon fats. There are several others, but no enzymes are provided by nature which act directly upon the celluloses. These are first attacked by bacterial fermentations which break down the cell walls which are mainly cellulose. This gives access to the nutrients within the cells so that they can be more easily acted on by the enzymes in the digestive tract. This means that the process of the digestion of crude fiber is more complicated than that of the other feed constituents and seems partly to account for the lower nutritive value of crude fiber.

EDITOR'S NOTE.—*This is the tenth in a series of articles, "Cereal Chemistry for Operative Millers," by Dr. C. O. Swanson of the Department of Milling Industry, Kansas State College, Manhattan. Dr. Swanson is an authority in the field of cereal chemistry and has contributed much to the knowledge of that field. The eleventh article in Dr. Swanson's series will appear in the next issue of this journal.*

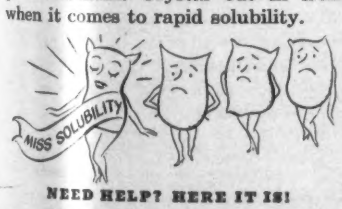
WE'VE AN EYE FOR "FIGURES"

WHO WINS the beauty contest? The lovely with the best figure. For she's the one the judges pick, when a bevy of pretty girls passes in review. Which just proves that the right kind of figure always makes a hit . . . that shape is often the measure of success.

Take the salt business, for example. Just as our super-glamour gal's figure is "different," you'll find the shape of an Alberger crystal different. For only Diamond Crystal is *flash crystallized*—crystals caused to grow much more rapidly. As a result, Diamond Crystal Alberger flakes have maximum specific surface. And any chemist or food technologist knows that the solubility rate of salt depends on specific surface more than anything else.



So, if it's rapid solubility you're interested in, it will pay you to study Diamond Crystal. Compare it with the salt you're now using. Examine its crystals. You'll be delighted with the results of your laboratory comparison, and equally pleased when you follow up with actual plant tests. Yes, a trial will convince you that the *right shape* puts Diamond Crystal out in front when it comes to rapid solubility.



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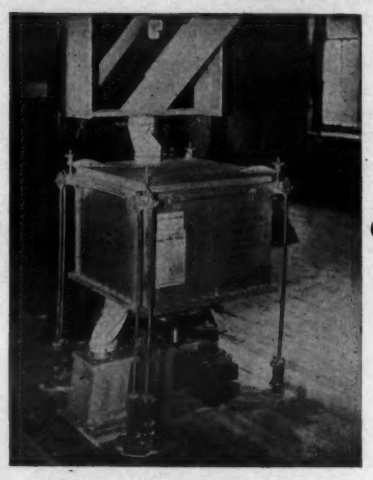

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Canada's Flour Experiment

(Continued from page 3a)

ists, then either some enrichment procedure must be adopted, or other means must be found to supply the needed vitamins. To persist with the present policy could lead to nothing but further disappointment and failure.

The situation was also realistically discussed by Dr. Tisdall. He stated that according to the available evidence, the national diet was definitely deficient in thiamine and riboflavin, and probably deficient in nicotinic acid. It was no use, he said, making Canada Approved flour that people will not buy, and in any case, this flour could do nothing to relieve the riboflavin deficiency. He agreed with the millers that the only sound procedure was to make an *acceptable* flour as high as possible in natural vitamins and to use that flour as a carrier for the needed mineral elements and synthetic vitamins.

At this point, it is perhaps worth while to consider what contribution vitamin B white flour was making to relieve the dietary deficiencies referred to by Dr. Tisdall. On the basis of information furnished by members of the Canadian National Millers Association, it was estimated that during the last nine months of 1942 this flour had constituted only 7% of the total flour used in Canada. The amounts of thiamine, riboflavin and nicotinic acid in 7½ oz (the estimated daily per capita consumption of flour in Canada) of vitamin B white flour and of standard bakers' flour are given in the accompanying table.

Milligrams per 7¼ oz—	Thiamine	Riboflavin	Nicotinic acid
Vitamin B white flour	0.53 (176 I.U.)	0.075	2.41
Bakers' grade	0.24 (80 I.U.)	0.061	1.91
*Difference	0.29 (96 I.U.)	0.014	0.50
7% of difference	0.02 (7 I.U.)	0.001	0.035
Recommended daily allowances	1.5 (500 I.U.)	2.2	15.0

*The complete substitution of vitamin B white flour is not a practical possibility. For most types of cake, biscuits and pastry it cannot be used at all.

The above table also shows the increased amounts of the three vitamins, on a daily per capita basis, secured by the population as a result of the introduction of vitamin B white flour. It thus provides a measure of the failure of the flour to accomplish its purpose. Dr. Pett has stated that the average daily per capita deficiency of thiamine is not less than 0.7 mg, so that the net result of the campaign during the period under review was to make good only 3% of the existing thiamine deficiency in the population as a whole. This contribution, small as it is, is the *only* benefit that we can definitely credit to the new grade of flour. Its influence on the intake of riboflavin was entirely negligible and nearly so in the case of nicotinic acid.

In considering these figures it is necessary to bear in mind a point of some importance. Much of the vitamin B white flour was not sold and is still not being sold, either directly or indirectly, to the civilian population. It is used in the production of bread sold under government contracts (which specify the delivery of vitamin B white bread) for army and air force camps. The proportion of vitamin B white flour freely selected by housewives and consumers was thus considerably less than 7% of the total flour disappearance. Many bakers have expressed their intention of giving up the use of this flour when their government contracts come to an end.

REVISED SPECIFICATIONS FOR VITAMIN B WHITE FLOUR

The January meeting led to another in July, and in August, 1943, amendments were made in the specifications for vitamin B white flour. Among other changes which need not be considered here, the required B_1 content was reduced to 340 I. U. per lb, on a 15.0% moisture basis, but at the same time a maximum ash limit of 0.595% (at 15.0% moisture) was also established. This latter provision, unfortunately, has added greatly to the problems of producing vitamin B white flour in some of the mills. In certain districts mills have found it an easy matter to meet the new specifications, but in others, where the ratio of thiamine to ash in the available wheat supplies is relatively low, the ash requirement has made it a real problem to produce flour which will meet the legal requirements.

THE PRESENT SITUATION

The adoption of the new standards has not materially altered the situation and the position at the present time may be briefly summarized as follows: No nutritionist in Canada or elsewhere is giving unqualified approval to the vitamin B white flour program, though several have criticized it, and Dr. Tisdall and others have recognized its ineffectiveness. Not a single cereal chemist has come to the defense of the program, and all those connected with the industries concerned, as well as some independent authorities in this field, e.g.,

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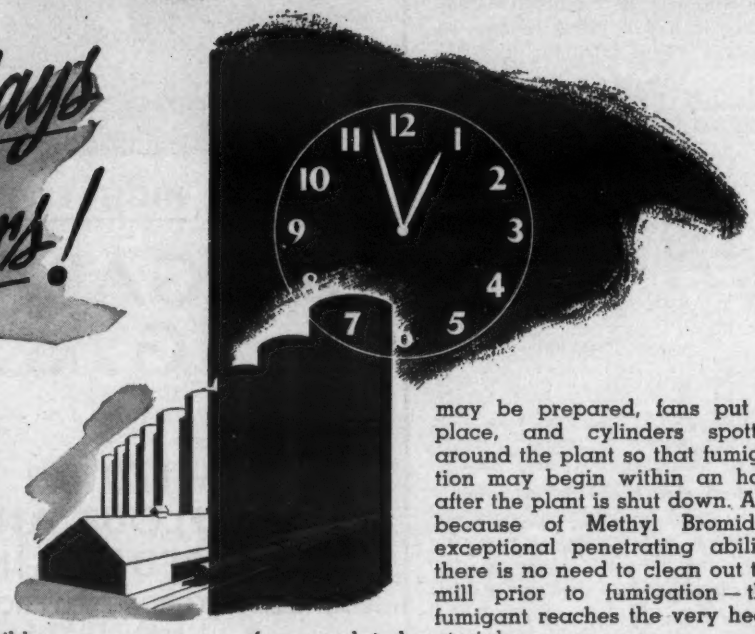
from days to hours!



Complete and effective fumigations are being accomplished with Methyl Bromide in a few hours by our Armed Forces. To flour millers and other food processors, pressed by wartime demands, this means that savings of valuable working time and sharp reduction in the amount of "down-time" required for periodic fumigations are possible.

Methyl Bromide penetrates faster than other materials—gets the job done more quickly under all circumstances. And, since exposure periods are automatically shortened as dosage is increased, it is possible to conduct fumigations overnight, with a minimum loss of working time, simply by "doubling up" on Methyl Bromide dosages.

Practical demonstrations in flour mills, for example, have shown that a thoroughly satisfactory fumigation job may be accomplished in as little as an eight-hour exposure period. Here, two pounds of Methyl Bromide per 1,000 cubic feet are specified, rather than the usual one-pound dose.

Further important savings in time can be made by doing the major part of the prefumigation job while the mill is still in operation. Sealing materials may be prepared, fans put in place, and cylinders spotted around the plant so that fumigation may begin within an hour after the plant is shut down. And because of Methyl Bromide's exceptional penetrating ability, there is no need to clean out the mill prior to fumigation—this fumigant reaches the very heart of accumulated materials.

Still more valuable time is saved by Methyl Bromide because of its unusual rapidity of aeration. While the time required for aeration varies, it is generally accomplished within one or two hours after fumigation, and the plant soon restored to normal operations.

We will be glad to put you in touch with a dependable, competent industrial fumigator in your vicinity—one who can help you save both time and money through the proper use of thorough, short cycle Methyl Bromide fumigations.

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Methyl Bromide's rapid penetration and quicker venting enable you to process materials faster . . . fumigation chambers handle more material, do double duty.

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Dr. R. K. Larmour and Dr. C. H. Bailey, have condemned it. The promised support of the medical fraternity has not been forthcoming. With almost complete unanimity, representatives qualified to speak for the milling and baking industries have advised the government that in their opinion the plan is fundamentally unsound. And, finally, the public has gone on its way buying the types of bread which appeal to the eye and to the taste, and the grades of flour which could be depended upon to give good results when baked by the accustomed methods. This last fact constitutes the underlying reason for the opposition to the program on the part of the milling and baking industries, just as the low vitamin content of the flour forms the basis for the opposition of those who have a special interest in nutritional problems.

OTHER OBJECTIONS TO VITAMIN B WHITE FLOUR

Millers and bakers who have a vital interest in the matter are satisfied that the introduction of a flour of a darker color, inferior baking qualities and greater variability, can never lead to an increase in flour consumption, though they recognize that it will not have the reverse effect since standard grades of flour remain freely available. But long-extraction flours have been used in the past, and are being used now, as a means of reducing *wheat* consumption. For each barrel of vitamin B white flour which replaces the standard bakers' grade flours the consumption of wheat is reduced by as much as 15 lbs.

Another objection to the vitamin B white flour program and one of particular force at the present time, is that the manufacture of this flour leads to a marked lowering in the quality and quantity of the millfeeds now so urgently needed for the production of meat, milk and eggs; 20% less millfeed is produced when vitamin B white flour is made instead of bakers grade (second patent) flour. Because of these effects upon wheat consumption and feed production, the use of long-extraction flour is opposed to the interests of those whose welfare is the special concern of the Department of Agriculture.

RECOMMENDATIONS

The Canadian National Millers Association suggests that official recognition now be given to the failure of vitamin B white flour to relieve the dietary deficiencies over which the nutritionists have expressed such concern, and that since this flour has failed to win either scientific support or consumer acceptance, efforts to encourage its consumption either in Canada or elsewhere be discontinued. With this suggestion the association repeats its previous recommendation that, if it is considered in the interest of public health to restore to white flour certain nutrients partially removed during processing, serious consideration should be given to a policy of enrichment with pure vitamins.

A.O.M. Convention

(Continued from page 9a)

out of a membership that had increased to 225. When the association met in 1897, again in Chicago, 17 millers and seven allied tradesmen were present. The treasury had a balance of $206.20. The highest attendance record was established at the 1914 convention which was held in Buffalo, N. Y. There were 1,866 millers and allied trades representatives registered at that gathering. W. P. Stack, Dowagiac, Mich., was elected president at the first convention to succeed Mr. Dedrick. Mr. Stack served two consecutive terms. His successor, A. J. Weindel, also served two consecutive terms. The champion, however, was O. M. Friend, who was elected for three successive years. George H. Lewis, who served during 1907 and 1908, was the last man to be elected president more than once.

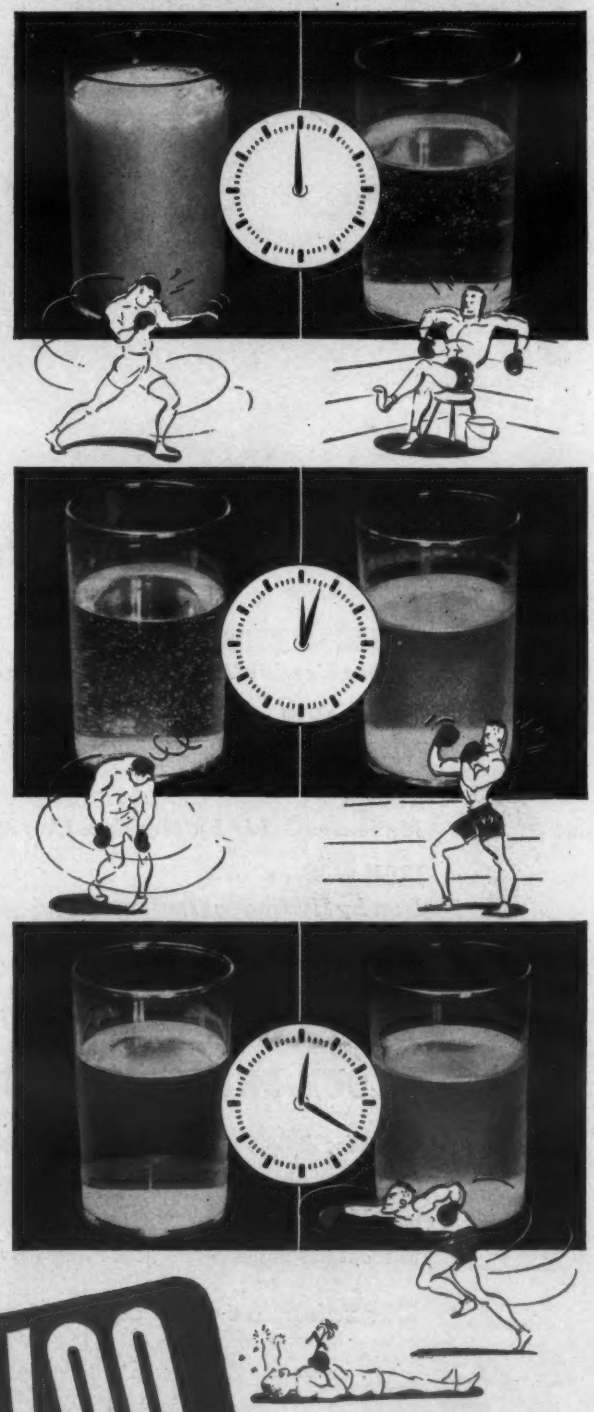
The present secretary, W. E. McCraith, is the ninth man to serve in that capacity. The succession of secretaries has been as follows: J. M. Mattingly, J. F. Mueller, B. W. Dedrick, J. A. Wells, Hugo Roos, M. F. Dillon, C. W. Partridge and W. E. McCraith. Mr. Dillon was the first full-time secretary. At the present time the office of secretary is filled by appointment, the executive committee deciding who will be appointed and how much he shall be paid.

The name of the association was changed at a convention in Kansas City in 1919, from the Fraternity of Operative Millers of America, to its present name, the Association of Operative Millers. The organization has members in Canada and in several foreign countries.

The Association of Operative Millers occupies a unique position in the nation's industrial and technical organizations. Innumerable other branches of industry maintain organizations for scientific research, and some of the branches, the lumber industry for instance, have persuaded the government to take over their research program. All other industries,

Compare the ACTION

ORDINARY PHOSPHATE V-90



Sure . . . V-90 *looks* like any ordinary phosphate . . . and yet it's easy to *see* a big difference. Just take two glasses of water. Add a teaspoonful of ordinary phosphate and soda to one . . . V-90 and soda to the other . . . then watch!

Almost instantly the ordinary phosphate and soda fizz violently. The soda with V-90, however, remains inactive. Three minutes later you'll find that the ordinary phosphate mixture has practically stopped bubbling . . . while the V-90 mixture is just coming to life.

Here, in this simple test, is the secret of V-90's remarkable baking action. Where ordinary phosphate releases and *loses* almost 60% of the vital leavening gas in the three minutes that it usually takes to mix, roll, and cut the dough, slow-acting V-90 retains fully 85% for *action in the oven where it counts.* Result . . . greater volume, lightness, soft, silky texture and whiter crumb color for which V-90 biscuits have become justly famous.

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however, contribute to the financial support of their research programs.

But in the milling industry, it remained for the millers themselves to institute the needed research and the Association of Operative Millers has contributed much to the advancement in milling technology.

The results of research conducted by the various agricultural experiment stations have been of incalculable benefit to many other industries, especially to agriculture, dairy manufacture, food processing, chemistry, machinery, etc.

Only the Kansas Agricultural Experiment Station is equipped to conduct scientific research in milling technology and the scope of its research is limited by the physical size of the mill—its capacity is 125 sacks—and by the amount of research funds granted to it by the state legislature. In spite of these limitations, the Milling Industry Department has made many valuable contributions to the knowledge of milling technology. Several graduates of the department now occupy important positions in the industry today. Carl Arnold, president of the Association of Operative Millers, is a former student of the department.

Few mill owners have ever given any real encouragement to the organization or any manifestation that they are conscious of the real value of the organization to the industry as a whole. Several milling companies annually pay dues as associate members. This, and approving the convention expense account of the superintendent or head miller each year, constitutes the only support that many concerns give to the organization.

There are some executives, however, that realize the value of the association's program to the industry. They have observed that their millers and superintendents are better employees because of the increased knowledge gained from their membership and participation in the affairs of the association.

George S. O. Smith

(Continued from page 7a)

ant associations of times gone by," he explains.

He has other hobbies, but they're connected with milling, so he calls them "special interests." Those special interests are cleaning, grading, and keeping the mill mix uniform. He also is regarded as an authority on the handling of dust and air.

This short sketch of Mr. Smith might well have been subtitled "Or the Self-Education of a Professional Miller" for he has demonstrated the general pattern to follow in reaching the top in his field. He has balanced his experience in milling all types of wheat and flour, such as grinding spring wheat, soft wheat for the southern trade, and, of course, ample experience in hard winter wheat.

In more ways than one, George Smith's career has been a demonstration of the advisability of heeding the old axiom about young men profiting from the advice and counsel of their elders. The only bit of advice he would offer to young men, however, was this: "Whatever your vocation be, see that it is useful to the majority of people."—P. L. D.

Hard Wheat

(Continued from page 8a)

of the smooth roll surface he has, and if a lot of hard wheat is to be ground, it will pay him to have first, second and third middling rolls corrugated, using a 30-cut on first middlings, and a 35-cut on second and third middlings. These corrugated rolls will not hurt your soft wheat flour.

On most soft wheat mills the sifter can be used as is to bolt hard wheat stocks fairly well, but the miller will soon find many places where a slight change would be helpful; the top scalp of the first and second middling sifter could be some finer; slightly more coarse flour silk may be used on first, second and third middlings section; are a few of the likely changes that might be helpful. The soft wheat setting on the purifiers will be away off the beam; the air will need adjusting; and many flights cut so as to grade the free flowing middlings to where they will be ground on the roll best suited to their size and purity.

Instead of a first break flour that can be used in 65% patent flour, the soft wheat miller will find a flour that is none too good to go into a 5% low grade, but he will have one consolation—there won't be a lot of it.

Be careful of the bleach on hard wheat flour if chlorine is being used; you might find it best to use about half the normal amount of chlorine and use about ⅛ oz of Novadel per cwt; this will give a nice single bleach on hard wheat flour and with little chance of it becoming rancid if stored for a long period of time.

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Milling 60 Years Ago

Arrangement of Bolting Devices

By Louis H. Gibson

SOMETHING was said in the preceding installment about the relation which the proportion of sharp material in a reel bore to the product of that reel, and an illustration was used to show the effect of decreasing the amount of sharp material in the reel at the same time that the flour was taken out. This was done by placing scalping cloths at the tail of each reel which gradually increased in fineness, counting from the first reel downward. Thus the stock became finer as it passed from reel to reel. There are other means of accomplishing this result, which will be mentioned in the course of this chapter.

The whole object of this is to keep the material going into the various reels in a condition so that it will contain the proper proportion of soft material to bolt clean, and at the same time a sufficient amount of sharp material to give the reel its required capacity. One great point with the centrifugal reel is that it will bolt softer stock than a common reel. It will rebolt flour which would paste a common reel so that little or nothing would come through.

This principle of keeping the stock as soft as possible to bolt is one in which the writer has great confidence. By such an arrangement it is possible to keep thoroughly dusted stocks going on the rolls or purifiers, which facilitates the work of feeding and purification, and gives the rolls and purifiers less to do and a better chance to do their work, and to do it well; therefore a less number of reductions of the middlings and other stocks is necessary in order to finish. It is quite often the case that floury material is run on the rolls to be reduced, when such a reduction is not necessary. By merely removing some middlings or sharp material, which there is in this stock, it can be bolted and will produce white, clean flour. Then by taking the middlings which are separated from this stock, they can be reduced and thus accomplish in a direct and simple way, and at a single reduction, what it would have taken many to accomplish were the floury stock and other material run to the rolls together.

Calling to mind other methods of the application of this principle, stock from the sizing rolls will be taken. One way of arranging and clothing for such separation is here shown.

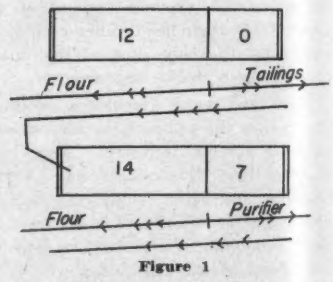

Figure 1

Here the stock from the rolls is going on a No. 12 cloth and before any of the middlings are taken out, flour is taken from the stock. What goes through the cloth goes into the next reel, which, to compensate for the probable result with a coarser cloth, is clothed with a No. 14, for the flour portion, and No. 7 through which to take the fine middlings for the middlings bin. The stock which goes over the No. 7 ordinarily goes to a purifier. The details of such an arrangement, though not uncommon, are altogether objectionable. It is suggested that the arrangement shown in Fig. 2 be substituted.

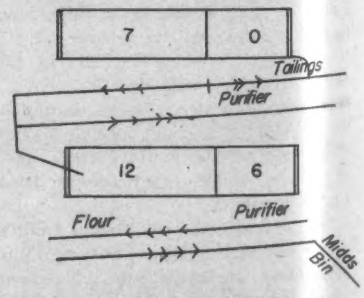

Figure 2

Here the product of the sizing rolls goes on a No. 7 cloth first, where the flour and fine middlings are taken out. Then the material goes through the 0, is

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in a dusted condition, and can go directly to the purifiers. The stock which goes through the No. 7 is soft enough to bolt clean and bright through the No. 12 cloth on the next reel. The tail of this reel is No. 6, which will carry over some stock that originally went on the No. 7. This is on account of its being softer in this reel—that is, containing a smaller proportion of sharp material—than on the reel above where it went through the No. 7 cloth, and had the coarse middlings to make it bolt freely.

The product of the 6 cloth will be much cleaner and brighter than that of the 7 on the tail of the reel in the other instance, because it does not have the heavy, coarse middlings out of which the flour has been taken, and which will wear off or beat their impurities through the cloth. It is very clear that this arrangement shows benefit to the flour, as well as the middlings. In the first place, the middlings are dusted over a No. 7 cloth, which takes out all the flour and fine middlings; and secondly, the flour and middlings in the second reel are benefited by not being associated with the heavy and sharp stock above.

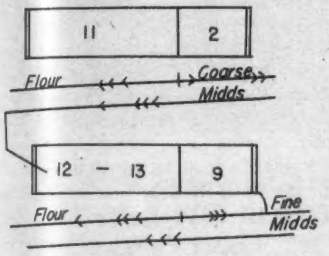

Figure 3

It is not long since the arrangement (or its equivalent), shown in Fig. 3, was used in separating the middlings and flour of the four middle breaks.

Such an arrangement has the same objections as the one shown in Fig. 1 in the handling of sizing stock. In the diagram here given there is flour, together with all grades of middlings as coarse as 000, going into the first reel, and flour is taken off on the first one through a No. 11 cloth. It might be a 12 or 13, and the evil of such an arrangement would be as great. In any event, coarse middlings go off over a 2 cloth, and the product of this cloth, together with the No. 11, would go into the bottom reel, and it would still be too sharp to bolt clean on the numbers given, unless a larger portion of the product of the No. 11 went into this reel, in which event the stock would be too soft to dust the middlings which passed over the 9 cloth. Thus it will be seen that in one instance the flour will be sure to contain more impurities than it would under more favorable circumstances, and in the other the stock would be too soft to dust the middlings over the No. 9 cloth. This illustration is given because it is one which is known to have been used in a number of instances, with the result described.

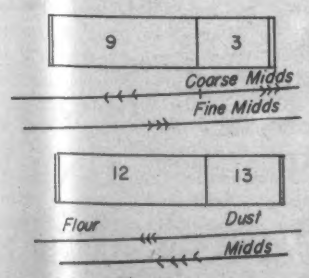

Figure 4

Having had experience with the arrangement illustrated in Fig. 3, the one given in Fig. 4 is what suggested itself as a remedy.

Here the middlings are scalped and graded first and the flour taken out afterward. The flour and dust middlings are taken out through No. 9 cloth and the coarse and fine middlings graded over a No. 3, or any other desirable number. This brings the stock going into the second reel soft enough to bolt clean and still sharp enough to bolt freely, it having originally passed through a No. 9 cloth. This arrangement not only brings this stock soft enough to bolt clean, but is also sharp enough in the first reel, having all the large middlings with it, to thoroughly dust all grades of middlings over a No. 9 cloth, and before it gets to the grading number. This is quite desirable and saves a dusting reel, which would be necessary on soft wheat according to the first arrangement. It takes advantage of the large middlings to aid in dusting, and at the same time gives the stock to the second reel soft enough to bolt clean.

The clothing of the upper reel is a good deal a matter of judgment.

v v

EDITOR'S NOTE: This article is a reprint of a chapter from Mr. Gibson's celebrated book, "Gradual Reduction Milling," published in 1885. The author was employed by a Minneapolis, Minn., flour mill and made a careful study of the operation of roller mills and was a frequent contributor of technical articles to THE NORTHWESTERN MILLER. Another installment of his book will appear in the next issue of this journal.

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Fumigation of Flour Mills

By Donald S. Eber

Assistant Superintendent, Centennial Flouring Mills

The purpose of this article is not to attempt to provide a cure-all for the problem of infestation and insect control, but rather to review the methods and systems with which we are already familiar.

Good housekeeping or plant cleanliness is essential to any successful attempt at insect control, and constant use of the hand brush and floor brush along with a good contact spray, between the periods of general plant fumigation will effect a kill of many of our more common insects and destroy much of the larvæ and eggs that are hit by this contact spray, providing that this contact spray is used often enough and in sufficient quantities. There are many satisfactory so-called contact sprays on the market. The handling of this most important job should be assigned to one man or one group of men depending upon the size of the plant. This will give closer supervision of and a constant check upon the insect condition in the mill. A systematic method of distribution should also be developed, such as spraying around piles of used sacks, around elevator boots and heads, along cracks in walls and floors, around grain bins and every place that might harbor insects of any kind.

Some millers defeat the very purpose of fumigation by doing a first class job on the mill and leaving the warehouse and feed unit to look out for themselves. Quite often they will clean out all infested sacks and materials from the mill and drag them out into the warehouse instead of taking them completely out of the plant and destroying them or taking them into the fumigation vault for conditioning. In this way a clean warehouse often becomes reinfested and gradually the insects work their way back into the mill.

The importance of regular and systematic fumigation will never be realized by some millers until they have a shipment condemned. Just how much of this has been done was stated by Kenneth E. Monfore, of the U. S. Food and Drug Administration, in a recent address, in which he stated that in a period of 18 months, 14,523,506 lbs of flour had been seized throughout the country because it was insect infested, or rodent damaged or otherwise unfit for human consumption.

The selection of the type gas to be used is still very much a matter of the miller's choice as all of them have advantages and all have disadvantages. Hydrocyanic acid gas (HCN) is most generally used. It is one of the most dangerous to handle but if proper precautions are observed is one of the most efficient.

Methyl bromide is known to penetrate further than cyanide and in some instances is preferred to cyanide. Very satisfactory results have been achieved by using both gases for a single fumigation job. It is highly recommended for use in vaults and can also be used to fumigate a single pile of infested material in the warehouse, by using a tarpaulin to cover completely the pile to be fumigated and making sure that it is tight around the bottom by piling filled sacks of some material on the base of the tarpaulin. The methyl bromide gas is then introduced to the pile by means of a tube which is inserted into the tarpaulin and the other end connected to a cylinder of the gas. The manufacturers do not recommend methyl bromide for fumigation in loosely constructed buildings, due to its rapid expansion. There is much yet to be learned of methyl bromide, as it has not been in use as long as some of the other fumigants.

Chlorpicrin, larvacide (tear gas), has some advantages in the fact that it can be applied directly to grain streams by means of a drop or sprinkle method and is also adaptable to piping systems. It is highly toxic but not considered as dangerous as some of the others. Because of its irritating action upon the eyes and throat, a person not properly guarded against its fumes is not apt to stay in them long enough to be seriously hurt.

Ethylene-dichloride or carbon tetrachloride are not so deadly and are desirable over any others for some types of work and some millers prefer it at all times. This of course is something that the individual must decide for himself.

After looking over the entire field of fumigants and insects, fumigation experts and millers, I think we make one mistake in calling one of our better known "bugs" the "confused flour beetle." The beetle is O.K., it's the miller that is confused.

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It is greatly to the credit of the milling and baking industries that they cooperated voluntarily and immediately in this program and in fact were enriching their products with vitamins and minerals even before the adoption of the idea by any official agency. This wholehearted cooperation has continued and as a result our people are the best fed of any on earth.

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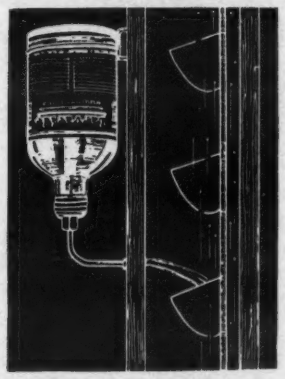

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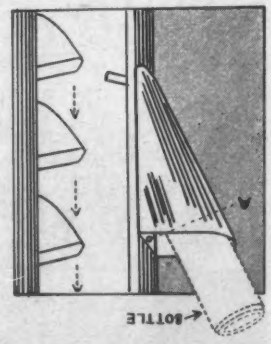

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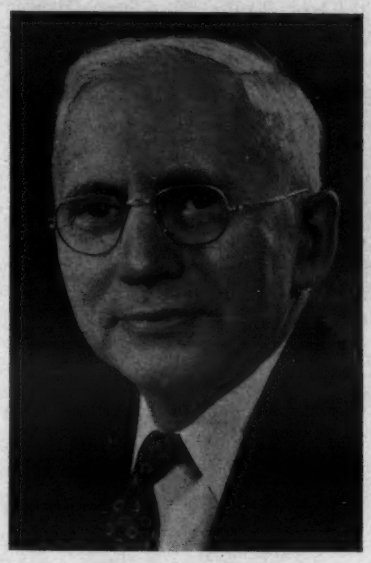
Dr. C. H. Bailey's New Book Is Noteworthy Addition to Cereal Chemistry Literature

BOOKS dealing with cereal chemistry, particularly the chemistry of wheat, are comparatively rare. This meagerness on books contrasts with the aboundance of wheat, being one of the two largest food crops of the world, rice competing with wheat for the first place. Information on wheat and its various constituents is widely scattered in books and scientific articles on cereal products. To have this information assembled between two covers is a noteworthy addition to the literature of cereal chemistry. This addition comes in the book, "The Constituents of Wheat and Wheat Products," by Dr. C. H. Bailey, professor of agricultural biochemistry and director of the agricultural experiment station, University of Minnesota. The book is published by Reinhold Publishing Corp., New York, and will be a great convenience and time saver for all students who are interested in wheat, particularly from the standpoint of cereal chemistry.



Dr. C. H. Bailey

The book carries the authority of the distinguished career of Dr. Bailey. From his first job as analyst in the Howard Testing Laboratory, Minneapolis, to his present administrative position, Dr. Bailey has been associated with and has been a leader in the investigation of wheat and its products. His position as professor of agricultural biochemistry brought to him many students who were candidates for the doctor of philosophy degree. Directing their work required delving extensively into the literature of scientific articles connected with cereal chemistry, particularly wheat and its constituents. One result of this work was the compilation of what is probably the most complete card index system in existence on wheat and its products. This may be said to have furnished the framework for the book, but the author's skill in arranging and elucidating the facts has made an interesting story.

The most unique constituents of wheat are its proteins, which are different from those in all other cereals in that they make the baking of light bread possible. It is therefore logical that seven of the 16 chapters should be devoted to these constituents. The complexity of wheat proteins is indicated by the chapter headings: early researches on wheat proteins, prolamins of wheat, glutelins of wheat, water and salt soluble proteins, crude protein and crude gluten, nucleic acid, and nonprotein nitrogen.

Starch is covered in one chapter, although it is the one most abundant constituent in wheat. Wheat starch does not vary as much in composition as the wheat proteins nor has it received as much attention from students of cereal products. The sugars are likewise given one chapter.

The proportionally large amount of space given to constituents which occur in relatively small amounts is one of the unique characteristics of the book. Seven chapters, covering 132 pages of the text, deal with such constituents. One chapter covers gums, pentosans, hemicelluloses and cellulose; another chapter the lipids, phospholipids and sterols. These compounds have in the past received comparatively little attention and this more extensive treatment will stimulate further research on their influence on quality. The minerals (ash) constitute only about 2% or less of the wheat, but Dr. Bailey devotes two chapters in the book to their treatment. Most of the mineral elements, which occur in wheat, are given one of the longest chapters of the book. The halogens (chlorine, bromine and iodine), sulfur and selenium are treated in another chapter. Acidity and methods for its determination are reviewed in one chapter. Flour bleaching has developed because of the pigments in the wheat endosperm. The various pigments and methods for their estimation receive one chapter. Production of white flour has been criticized by dietitians because of the removal of vitamins in the bran and germ. One of the longest chapters in the books treats of the vitamins of wheat and wheat products. In the treatment of these vitamins are included methods of assay, their place and effects in nutrition, and data are given for their occurrence in wheat and its products.

The great value of this book is as a source as well as guide in materials

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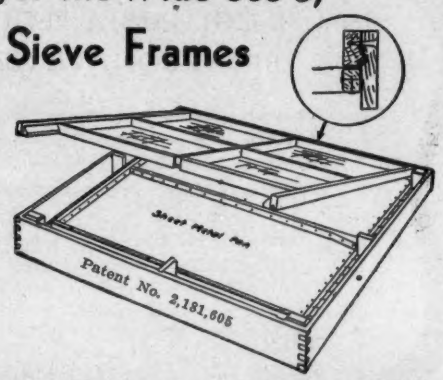

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needed by people whose work is to evaluate wheat and its products for quality and for their extensive use in foods. It is estimated that more than one thousand articles were scrutinized in preparing the material for the book. The subject index is complete and extensive. From this the researcher is guided to the pages in the book where the item in mind can be found. The names of the authors of articles and books are also given in a separate index which gives the pages of the book where the author's work is mentioned and the places of publication are given in footnotes.

The person who looks for extended discussions of subjects in cereal chemistry or of related problems will be disappointed, but the person who looks for short statements giving information on the various subjects included will find the book most useful. Such a person will be pleased by the helpful way the numerous citations guide him in finding as complete information as exists on the subjects included in the treatments.

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Vitamins in King Tut's Time

A SAMPLE of barley more than 3,275 years old, taken from King Tuthankhamen's tomb in Egypt recently was analyzed for the vitamin content of the grain by chemists on the staff of the Cereals Research Station, Ministry of Food, at St. Albans, England. The grain had been kept for some time in the Museum of Antiquities, Cairo, Egypt, and was extensively carbonized. Its structure, however, was comparatively undamaged and the germ, with its scutellum and embyro components, was intact. The grain had lost much of its original weight, being about two thirds the density of fresh barley.

The chemists' report on the vitamin analysis was as follows:

"No vitamin B_1 could be detected in the grain, even in the dissected scutellum. On the other hand, the contents of riboflavin and nicotinic acid, as determined by microbiological assay, were found to be 0.85 microgram and 28 microgram/gm. respectively: the corresponding values for fresh barley average 2.5 micrograms and 90 microgram/gm.

"The total phosphorus in the barley was found to be 414 mgm per 100 gm and the phytate phosphorus 0.4 mgm/100 gm. Average values for fresh barley are 370 and 249 mgm/100 gm respectively. There has, therefore, been practically complete hydrolysis of the phytic acid originally present in the grain, but no trace of an active phytase can now be found. Likewise the grain gives no reaction for phosphatase.

"It is surprising to find that a molecule so complex as riboflavin could survive for such a long period. Part of the explanation is to be found in the very low relative humidity in the tomb, while we have also observed that the barley has increased in acidity, a 1% suspension giving a *p*H value of 4.1 as against 6.25 for fresh barley. We have no information on how the barley was stored; but it is possible that its preservation was helped by an oxygen-free atmosphere created by its own respiration and the oxygen uptake of other products stored with it.

"Although the germ was intact, it was found to contain a number of well defined crystals, and these are being examined by our colleague, Dr. Hinton, in an attempt to establish their chemical identity. It will also be of interest to know if the crystals are composed of a product with a very small velocity of crystallization."—*Milling, Liverpool, Eng.*

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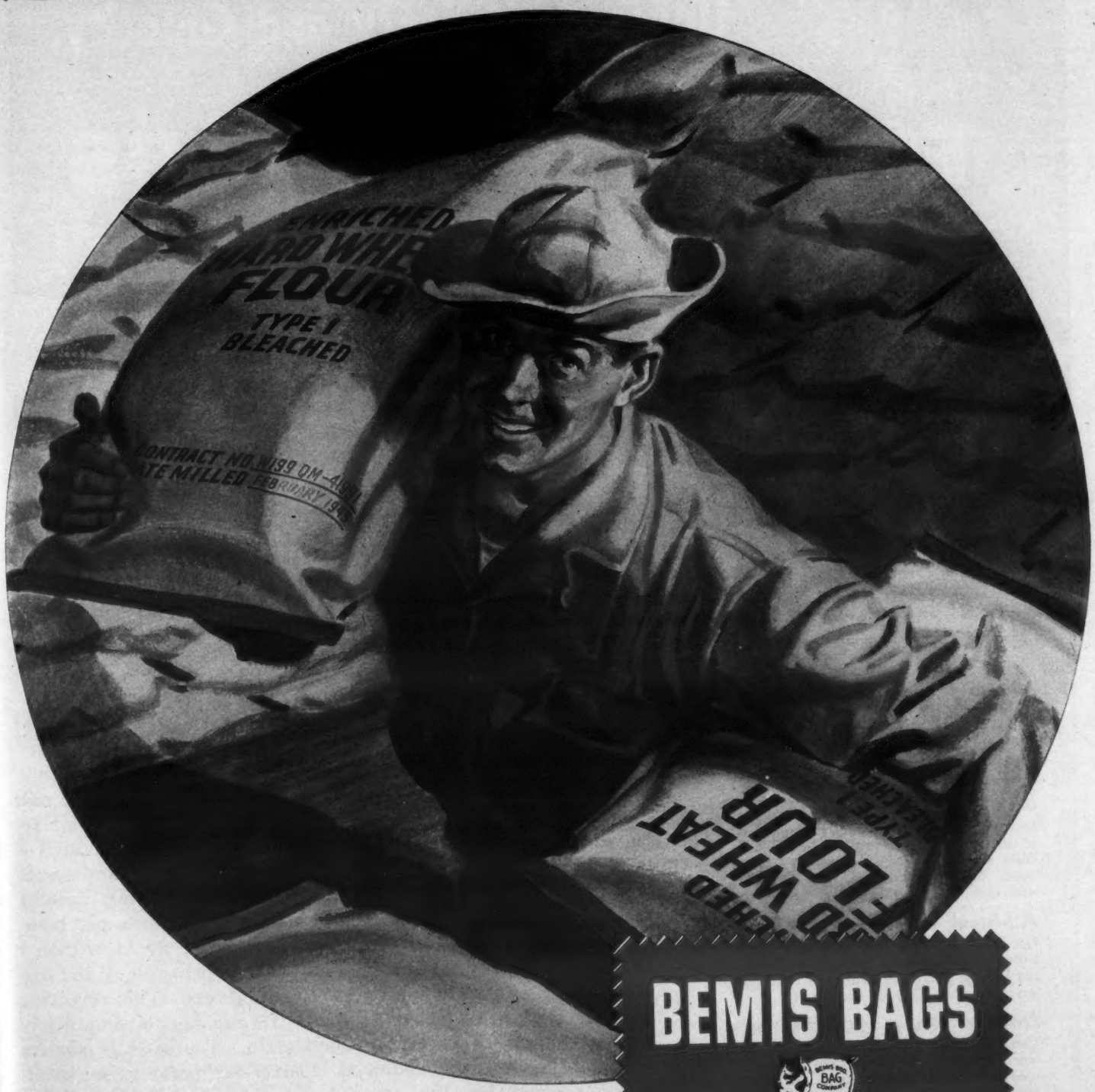

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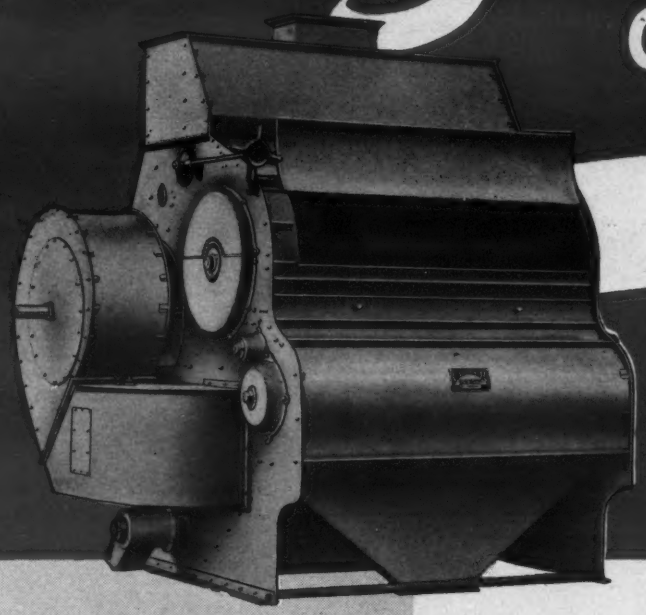

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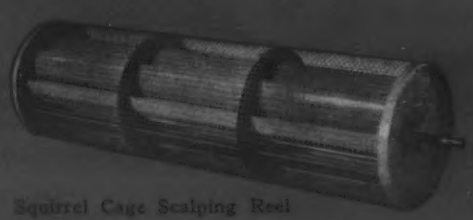

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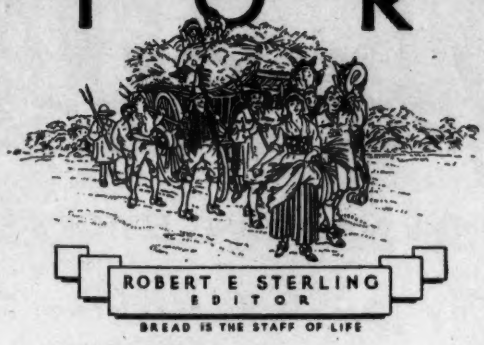

THE TRUTH WILL OUT

LAST week's virtual surrender of the WFA and OPA to the overwhelming flood of foodstuffs everywhere in the country merely brought to light circumstances that long have been known to millions of even reasonably informed people but have for many months been subject of official concealment. In a single day it was frankly revealed that armed forces and lend-lease buying had accumulated more than sufficient stock piles and that not less than twelve to fifteen agricultural products were in such generous supply as to create new problems in their handling and distribution.

The government's change of front was emphasized by release of rationing restrictions all along the line and by frank discussions of how best to get unwieldy surpluses into consumption. The school lunch bill suddenly found an end to congressional opposition. There was revived discussion of resumption of the nauseous "food stamp" scheme to distribute "surplus agricultural products" among the alleged poor and jobless. Even serious attention was being given to restoration of government buying to maintain prices in face of enormous supplies and insufficient demand. Hog shipments were temporarily suspended in the corn-hog belt due to inability of packers to supply a market for them because of light civilian buying and every inch of available storage space being jammed to the eaves. Millions of cattle on the western ranges are there because of lack of places to dispose of them, while black markets for better cuts of beef are everywhere operating at capacity.

All of this is, of course, due to the fact that, not in response to phony "goals," but in both patriotic and good business response to wartime needs, food producers everywhere in the country gave their efforts to the actual job of production while the propaganda boys at Washington were scolding about complacency and blindly following the British pattern of hard civilian rationing far beyond proved need for it in this country. Today we have the inescapable result.

Unfortunately, the evil is not limited to the present glut of supplies. What is almost certainly to be expected, indeed may almost be regarded as inescapable, is that reverse civilian "lend-lease" now will have to be carried to such extreme that months or a year from now the vicious cycle will repeat itself, in the manner of what Mr. Hoover used to discuss as "booms and slumps."

Animal population now may be expected to recede in keeping with the amount of feed available. Consumption will be working eagerly at the other end, grievous miscalculations will be made in over- or underestimating lend-lease and other forms of supplying world needs through the rest of the period of war and into the years of peace. Meanwhile, counsel of those nearest to the food production job, as in the case of western livestock men a few months ago, will be disregarded by officials justifying stupidities by claiming that "we are running this show." Other sensational announcements of change of "program" will follow one on the heels of the other.

It is a curious circumstance that through all of this unhappy lack of management of the nation's food supplies, wheat, almost the only staple food of which we had a great surplus, has been mismanaged just the other way about. Starting with too much, already we have too little; or, at least, were headed straight for having very much too little until out of the mercy of Providence unprecedented supplies of moisture added probably 100,000,000 bus, and quite possibly much more than that, to the lowest carry-over in years and thus greatly eased our prospective bread position for the next 15 months.

Perhaps it is idle, even graceless, to find too great fault with the bureaucratic direction of our wartime food handling. No doubt the men in positions of authority are doing their best. Yet, it is indisputable that officialdom has for months brushed aside earnest counsel of practical men claiming only experience and horse sense, and that this attitude and the actions growing out of it have been chiefly responsible for the present preposterous situation of a burdensome glut of food at precisely the time we were warned by every kind of available official propaganda that we should be "tightening our belts."

And what, by the way, has become of the warning that the millers of the country did not have sufficient capacity to produce the flour demanded to save the world from starvation?

——BREAD IS THE STAFF OF LIFE——

"GERONTISM"

SINCE we already have adapted the above caption from a recent editorial in the Washington Post and, further, since we would have to borrow figures quoted by it as subject of our own comment, it seems fairer to quote in full that paper's discussion of the increasingly important question of men far past the prime of life, perhaps even of their mental powers, now in positions of great public responsibility. It follows:

"There is no sharper paradox in recent American history than the change in the administration's attitude toward septuagenarianism. Seven years ago the President was engaged in the bitterest fight of his career in an effort to replace judges over 70 years of age. Now he has succeeded in getting a youngish supreme court, but his own cabinet is in very much the condition, so far as age is concerned, of the court that he regarded as senile. In 1937 the court had six justices over 70. At present the cabinet has five members over 70, and these happen to be the secretaries of state, war, navy (Secretary Knox has died since this was written), interior and commerce on whom the President chiefly relies to direct our participation in the war.

"Seven years ago the President feared that the 'lowered mental or physical vigor' of aged judges was leading them to avoid examination of complicated and changed conditions. 'Older men,' he said, 'assuming that the scene is the same as it was in the past, cease to explore or inquire into the present or the future.' So he proposed to bring into the judicial system 'a steady and continuing stream of new and younger blood.' Congress rejected the President's proposal because our plan of government calls for a judiciary free from executive control. But its decision did not imply that there should be no 'steady and continuing stream of new and younger blood' flowing into executive departments over which the President does have full control. Mr. Roosevelt's failure to apply his dogma to his own official family at a time when war is making extraordinary demands upon cabinet members is one reason why some of his ardent supporters in the past are criticizing the administration as a tired and ineffective regime.

"Senile leadership in Congress is even more flagrantly evident than in the executive departments. The seniority rule usually brings the oldest members to the chairmanship of committees and, once installed, they stay put until removed by death, defeat or reorganization of either House. In the Senate the ages of various committee chairmen are : Appropriations, 86; Agriculture, 80; Postoffices, 75; Privileges and Elections, 77; Commerce, Reclamation and Naval Affairs, each 71. In the House aged men also dominate several of the most important committees, as indicated by the following ages of chairmen: Ways and Means, 80; Foreign Affairs, 74; Rules, 78; Rivers and Harbors, 83.

"Someone has suggested that insofar as the age of personnel is concerned we have the oldest government in the history of the world. The bases on which such comparisons are made must be vague and uncertain at best. However, let us contrast our present gerontocracy with our Republic's first administration: Thomas Jefferson, 46; Alexander Hamilton, 32; Henry Knox, 39; Samuel Osgood, 41; Edmund Randolph, 36. Certainly the loss of vigor that usually comes with age is altogether too prevalent in high official as well as legislative circles. We think that Congress should not longer delay consideration of retirement plans and other means of hastening the replacement of inactive old men by vigorous public servants in their prime. And the President himself may be reminded, as we have reminded him before, that he can fire as well as hire."

These facts are so explicit and the Post's comment on them so fair that there is little we can add by way of amendment. There is no question of present senility in high places in government. Yet, if the former "nine old men" of the supreme court, positions requiring first of all long experience and maturity of mind and judgment, were too old longer to be useful, certainly many of the men now in places of great authority requiring quick understanding and prompt and sure decision are far, far too old for their jobs.

It is worth while also to note that many of the men in Congress now are candidates for re-election, that the fourth term the President himself seeks will end with his near approach to seventy and that several members of his cabinet, who presumably will continue in office, will be far older than that while the nation still is in the depths of recovery from war.

——BREAD IS THE STAFF OF LIFE——

WARTIME CONVENTIONING

CERTAINLY a lot of the conventions we have seen or heard of lately could be dispensed with on the demonstrable ground of their contributing in no sense to the winning of the war, much less to the writing of the peace. But it is no holier-than-thou attitude that makes us think a national millers' meeting of the kind that has just taken place in Chicago does not fall within that class. Few in or out of the flour industry would be ready to dispute that the Millers National Federation is involved in a major part of the war effort or to argue that its contribution could best be made by sitting at home and writing a letter. Those who attended the Chicago meeting must have felt that they were not remote from the armaments of victory.

Last year the degree of conventionitis was not great. But this year all barriers are down, no stranglehold on railway and hotel accommodations barred. Doubtless the great American get-together habit is ineradicable—obviously it is irrepressible. What would you, in any case, as long as travel remains as comfortable and dependable as, amazingly, it still is? And as long as, by way of example, the whole of officialdom—all of its billions of bureaucrats—keeps running about all over the place?

One miller who took his wife to last week's convention was not quite conscience-free—though he had no real reason not to be. He explained that this was her only chance for a vacation—and his, too, for that matter. Which poses a wartime hazard that has not yet been given the help of government planning. Business administration had no vacation last year—has little prospect of rest this year, or for the duration. If convention-going will do anything for this maladjustment, a vacation-deficiency so readily apparent in the milling industry, possibly it is due for some sort of manpower priority.

Stuffed Straights

FROM THE MANAGING EDITOR'S SIFTER

By Carroll K. Michener

LONG-STILLED CLAPPER.—Upon an evening in June, 25 years ago, a considerable and consequential gathering of gentlemen could have been noted in the main dining room of the Minneapolis Club. These important persons, among whom there was more than a sprinkling of men who guided the destinies of great flour milling and grain handling enterprises, were not quite sure why they were there until the late William C. Edgar, longtime editor and early proprietor of THE NORTHWESTERN MILLER, arose to announce the demise of THE BELLMAN.

Mr. Edgar was resplendent in crimson silk waistcoat, which he was wont to wear upon certain occasions as part of his evening dress. Only in this did his garb differ from that of the other gentlemen at the long table, whose starched bosoms (no cardboard dickies in that gallery) may have emitted a flutter or two—or at least a crackle—over the sensational divertisement.

THE BELLMAN, indeed, was dead. He said so himself, in a valedictory issue, date of June 28, 1919, copies of which were distributed to the diners.

Ciceronian oratory flowed, filled with eulogy, encomium and the tragedian's lament—some of it sounded, indeed, as if it could hardly have been impromptu but premeditated. But that is really neither here nor there. The main stupefying, flabbergasting fact was stubbornly apparent after all the elegies and protestations had been spoken— 13 years old, and at the very height of its powers and prestige, THE BELLMAN had clanged his clapper for the last time. With some emotion Mr. Edgar paid his own tribute to the great literary figure of his creation, some of the familiar pen-and-ink aspects of which are presented on this page. He said:

"There are others, I venture to believe, who will feel genuine regret over THE BELLMAN'S departure, for if the latter has made some enemies, he has made many good friends in the course of his lifetime, both at home and abroad.

"It has been a very great satisfaction to me that THE BELLMAN has been able to maintain to the end, without deviation or impairment, the same standards which were announced at the beginning, and that throughout the 13 years of his existence there has been no compromise with principle for the sake of profit or expediency.

"The experience has been worth while and, although THE BELLMAN is not to be perpetuated, his purpose is fairly accomplished and he deserves to be remembered with some credit, as one who did not live entirely in vain, since what of good he has preached will endure long after he himself is forgotten by a busy world, much engrossed in its own problems and possibly too attuned to more strident clangor to hearken attentively to his less insistent bell."

Since THE BELLMAN, having lost his voice, no longer could speak for himself, THE NORTHWESTERN MILLER explained matters to its readers, a large number of whom were subscribers to both papers. Thus:

"Probably no publication ever came to an end in the same way. The stockholders, who had received regular and satisfactory dividends annually from the beginning, had their investment returned, plus interest since the last dividend was declared. There were no liabilities whatever; subscribers who had prepaid beyond the date of discontinuance received rebates covering the amount due them; and a considerable amount of assets still remain in THE BELLMAN Co., which will continue its existence for the present, in order to protect the copyright and wind up the business."

Reporting upon the valedictory banquet THE NORTHWESTERN MILLER was able to say that around the board there were "evidences of very sincere regret." Similar expressions, it was attested, continued to be received at THE BELLMAN office, by mail and telegraph, after the Farewell Number appeared, "giving most convincing and gratifying proof of the esteem and confidence in which the publication was held by its readers." The number of letters deploring the discontinuance of THE BELLMAN was so great, in fact, that "in order properly to preserve them it was necessary subsequently to publish a pamphlet of 75 pages, entitled "THE BELLMAN According to His Kindly Friends," bearing the quotation, "Blessings brighten as they take their flight."

THE BELLMAN, it may be said for the benefit of those who did not come within the aura or era of that institution, was a literary weekly in the grand manner. It lived in the closing years of the great period of literary weeklies—in the time when it was the ambition of most men who were more than printers to produce a chatty, somewhat personal fireside companion, flavored with clay pipes, slippers, roasting apples and mulled wine; an implement of higher criticism and voice of intellectual consonance (though often of thundering dissonance) and authority.

THE BELLMAN was more elegant than most of its ilk. On the other hand it displayed a most commendable literary democracy. The unknown and unarrived author could find a place in its columns, so long as he was intellectually respectable and not unsocial in the Marxian (or what we know as the New Dealian) sense. As a result THE BELLMAN was a literary cradle—perhaps even foundling asylum—for some of the early works of many a poet, essayist and fiction writer whose talents, scorned then by other editors, later were to be given general recognition.

The Gurney that Used to Deliver The Bellman in the Business District of Its Home City

This was notably true of THE BELLMAN'S verse and fiction writers. Before winding up the Bellman company's affairs Mr. Edgar published, in the style and format of the celebrated Oxford Book of English Verse, a selection of verse from THE BELLMAN, and, similarly clothed, a collection of fiction. These books contain many a name well known now, not so well known or known not at all when the content first crept shyly into the BELLMAN office. Among the fiction writers were Robert W. Sneddon, Virginia Woodward Cloud, Ben Ames Williams, Eden Phillpotts, Margaret Adelaide Wilson, Edward Lucas White, Frank Swinnerton and Sir Arthur Quiller-Couch. Among the versifiers were Amelia Josephine Burr, Richard Burton, Witter Bynner, Bliss Carman, Reginald Wright Kauffman, Joyce Kilmer, Cale Young Rice, Clinton Scollard, Arthur Stringer, Sara Teasdale, Arthur Upson and Margaret Widdemer.

Why was THE BELLMAN, so old and yet so young, doomed to die? It rode upon the financial back of its more prosaic brother, THE NORTHWESTERN MILLER, and thus did not lack for sustenance, nor was its red ink critical to its accountancy. But three things do seem to have conspired toward the decision to put it away. The war of 1917-18 created publication difficulties. THE NORTHWESTERN MILLER grew and demanded the printing plant's full capacity. And, finally, Mr. Edgar wearied, at last, of his literary plaything. He had proved what he set out to do after long cherishing "a desire to conduct a weekly publication of general interest, different from anything of the kind that had ever been published in the United States."

* * *

As indicating the deep and lasting impression made by THE BELLMAN *both upon the literate and upon the unsophisticated, a gentleman somewhere between those extremes said to me the other day that he had always admired* THE BELLMAN *very much. It was a household appurtenance. But he feared his subscription must have expired. He could not recall seeing the last two or three numbers!*

■ ■ ■

. . . Vitamins are as old as King Tut at least. This much seems certain from laboratory findings of chemists at the cereals research station of the British Ministry of Food who recently went to work on a small sample of barley taken from the tomb of Egypt's Tutankhamen (c. 1350 B. C.). No vitamin B₁ could be detected, but there were traces of riboflavin and nicotinic acid (niacin). . . . The chemists were surprised to find that a molecule so complex as riboflavin could endure for such a long time. The germ was intact, but there was no enzymatic activity. This barley couldn't be germinated, therefore—if that's what you're coming to. Another explosion of the recurrent myth of mummy grain brought into fabulous production after centuries of entombment.

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whether plain or enriched, remain the same high standard, dependable flours that have characterized the products of La Grange Mills over the half century and more of their operation.

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"THE FLOUR SUPREME"

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Export Flour Insured ALL RISKS by

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Insurance on Flour
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The largest and most modern flour mill and elevators on the Pacific Coast with storage capacity of our mills of 2,500,000 bushels, together with more than one hundred elevators and warehouses in the choicest milling wheat sections of Montana, Idaho and Washington, insure the uniformity of all Fisher's Flours.

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Millers of Export and Domestic Flours
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REVIVAL OF COUNTRY MILLING

SINCE production of flour for war reached its peak last year Canadian mills have been casting about for ways and means of still further enlargement in their output and this goes for all parts of Canada where flour milling is established. Perhaps the country mills in the prairie provinces of the west deserve most praise for the manner in which they have measured up to this great call for patriotic national service, though one hesitates to single out any group for congratulations where all have done so superlatively well.

From the very beginning of this war the bigger milling companies of Canada have been operating to the limit of their capacity on war orders, although at all times they have been working under serious handicaps, some of the worst of which are due to restrictions and unbalanced controls imposed by Ottawa under the authority of a war measures act from which there is no appeal. Nevertheless, these companies have carried on and produced the goods regardless of consequences to themselves or their plants.

But it is the purpose of this brief story to honor the smaller western Canadian mills for their performances in the current crop year. In the beginning the war purchasing authorities of Great Britain were not interested in flour from this source, but as the conflict grew in magnitude the call for flour reached a point where even the smallest source of supply had to be tapped. So long as the goods comes up to a certain standard in quality all available flour is now being bought. A situation such as this was regarded as a challenge by country millers in all the prairie provinces —and they have met it. Having been on short runs for a long time they had little or no skilled labor available, nor under war labor restrictions, were they able to get the needed help, but, somehow these isolated units in what had suddenly become a priority war industry, managed to accept and deliver a highly creditable total of flour during the crop year which is soon coming to an end.

One of the results of this revival in country milling throughout Manitoba, Saskatchewan and Alberta is that transpacific markets have been able to get needed supplies of flour. In many cases the mills were not built for this sort of trade but most of them managed to meet the call and their products have filled the bill.

Having surmounted the initial problems of production, packing and transportation it may be expected that the crop year of 1944-45 will see a growing amount of flour from western country mills finding its way to world destinations where the demands of war have to be met. A.H.B.

Canada's Carry-Over Big Enough to Offset Subnormal Wheat Crop

TORONTO, ONT.—According to the Dominion Bureau of Statistics Canada is expected to dispose of at least 500,000,000 bus of wheat in the crop year closing next July, the largest disappearance since 1928-29, which year holds the record for overseas exports. Domestic utilization will account for a minimum of 175,000,000 bus of this total, while a substantial part of the balance will represent exports to the United States for livestock feeding purposes.

These figures suggest a Canadian carry-over of 375,000,000 bus of wheat at the end of July compared with 594,000,000 bus on July 31, 1943. With this much wheat on hand the bureau says that even a poor crop this year would not threaten Canada's ability to export a large volume of wheat during the crop year 1944-45, although it might result in the carry-over being reduced to more normal proportions by the middle of 1945.

The bureau further states that it is perhaps of interest to note that Canada's smallest wheat crop in the past 29 years was 180,000,000 bus harvested in the bad drouth year of 1937. A crop no larger than this in 1944 would permit of the disposition of 500,000 bus in 1944-45 and still leave 55,000,000 bus to be added to the 1945 harvest. The present moisture situation in western Canada does not breed optimism but at this early date neither does it preclude the possibility of a moderate wheat crop.

——BREAD IS THE STAFF OF LIFE——

POOL MAKES REFUNDS

WINNIPEG, MAN.—Saskatchewan Pool Elevators last week commenced payment to members of excess charges refunds, and interest on elevator deductions amounting to $2,165,000. Of the total, $1,800,000 is by way of refund of excess charges on grain delivered to pool elevators by member patrons during the crop year 1942-43. The balance of $365,000 on elevator deduction certificates has an interest allotment computed at the rate of 3% per annum.

——BREAD IS THE STAFF OF LIFE——

ON THE ISLE OF MAN

MONTREAL, QUE.—W. D. Moore, who retired from the position of export manager of Ogilvie Flour Mills Co., Ltd., Montreal, Que., some years ago and returned to his native Isle of Man, has written to G. A. Morris, vice president of the company, that out of the island's total population of about 50,000 people, over 6,000 are in the various armed services. Mr. Moore takes great pleasure in entertaining Canadians, many of whom like to spend their leave in the Isle of Man because of its restful atmosphere, and naturally is particularly interested in those coming from Montreal. Mr. Moore suffered an accident last summer while on duty as a warden which, much to his regret, necessitated his relinquishing that work.

OATS AND BARLEY EXPORT PERMITS DISCONTINUED

VANCOUVER, B. C.—Cut off from export shipments of wheat to American Pacific Coast states for several months, due to shortage of shipping tonnage as provided by the Commodity Credit Corp. in that organization's big program of buying Canadian wheat for feeding purposes, Vancouver grain exporters were shocked last week by a new Canadian Wheat Board order advising all shippers and exporters that for the present permits will not be issued for oats or barley (whole or processed) for shipment to the United States via the western gateway.

However, the order further advised that it was the commissioners' intention to review the situation in about 10 days and if it is found that the total unshipped balances on export permits now open have been reduced sufficiently, further applications will then be taken under consideration. This order also applies to shipments ex-British Columbia.

The effect of the order is to cut off this port from practically all trade except domestic. While the deep sea movement of wheat to U. S. Pacific Coast ports has been cut almost to nothing in the past month due to shortage of shipping tonnage, there has been a small trickle going by rail. To offset this loss of wheat business, Vancouver grain men recently have been doing a very fair business in oats, but under the new board order their only trade will be in screenings.

——BREAD IS THE STAFF OF LIFE——

VITAMIN REQUIREMENT ON LEVEL WITH THAT OF U. S.

TORONTO, ONT.—By a slip in the use of words this correspondence was made to say two weeks ago that the quantities of vitamins to be used in production of Canadian flour for the Newfoundland market after June 1 were to be as therein stated. This should have read that the totals named would be required. Canadian flour naturally contains a considerable amount of vitamins and the intention was to show the total amount contained and not the amount to be added. With this correction the statement made a week ago is correct. The net result is to bring Canadian flour delivered to Newfoundland up to the standard set in United States. Canadian mills expect to find no difficulty in meeting this requirement.

MILLS APPROACHING NEW HIGH MARK IN PRODUCTION

TORONTO, ONT.—In a report on the flour milling industry the Dominion Bureau of Statistics says that production of flour in Canada has been averaging more than 2,000,000 bbls of 196 lbs monthly since the commencement of the current crop year. The industry is operating close to peak capacity and is on the way to establishing a new high mark in output.

Output for March, 1944, totaled 2,267,307 bbls, against 2,193,029 bbls in the same month last year. In the eight months ending with March the output was 16,766,163 bbls, against 15,591,772 in the corresponding period of the previous year.

Both the grindings of wheat and the exports of flour during the crop year 1942-43 were of record proportions, but there is every indication that the 1943-44 figures will in each instance exceed those of last season.

Production and exports in the eight months are shown in the following table with comparative totals for the corresponding period of previous year:

1943-44	Production Bbls	Exports Bbls
August	1,888,030	1,121,568
September	2,014,255	873,917
October	2,118,409	849,886
November	2,175,831	857,691
December	2,173,433	1,106,479
January	2,041,193	1,125,034
February	2,087,705	854,272
March	2,267,307	1,226,281
	16,766,163	8,015,128
Totals last year	15,591,772	7,788,090

Production of winter wheat flour in March fell to the low level of 18,851 bbls as against 104,271 bbls in the same month of 1943.

——BREAD IS THE STAFF OF LIFE——

SUCCESSFUL STAMP DRIVE

TORONTO, ONT.—The bread and cake bakery group of the food industry's war savings stamp drive held in February reports highly successful results. With few exceptions every district in Ontario exceeded its quota. Particularly outstanding was the district of Hamilton under the chairmanship of R. H. Ackert, which sold $24,355 worth of stamps, exceeding the quota set for it by $16,355.

——BREAD IS THE STAFF OF LIFE——

TWO OGILVIE FIRES

MONTREAL, QUE.—The plant of Ogilvie Flour Mills Co., Ltd., in Montreal had two fires within a week recently. The second blaze was a particularly stubborn one. Dense smoke hampered the firemen who had to work at the sixth floor level where the fire is believed to have started. There was considerable damage.

——BREAD IS THE STAFF OF LIFE——

GRANDVIEW MILL BURNS

WINNIPEG, MAN. — The Grandview (Man.) Flour Mill owned and operated by Harry Braniski, was destroyed by fire last week. Damage was estimated at $15,000, partly insured.

American Business Problems After the War

A Talk in Behalf of the Committee for Economic Development by JAMES M. CLEARY *at the Annual Convention of the Millers National Federation Held at Edgewater Beach Hotel, Chicago, May 4*

THIS generation has seen our Christian civilization threatened by the most overpowering and terrifying attack in history. This challenge of barbarism armed by science is being defeated by forces spiritual and material in many nations.

Outstanding among these embattled forces is American industry. The arsenal of democracy has met, and more than met, the impossible demands made of it. Guns, ships, planes, tanks—all the munitions of war, have been produced in incredible volume. The war has not been won and probably will not be won for years, but it is being won and those who fight for us will never lack for the finest material in ample volume.

Without relaxing in the slightest the terrific pressure for maximum war production, American industry is giving thought and making plans to meet another challenge, a challenge in many ways as menacing as that of war—the challenge of peace.

Some day millions of men with bodies, minds and souls shocked or torn or soiled or exalted by the blood and sweat and horror of war will come home. These men, the saviors of civilization, must have jobs. This is their first, their basic, their minimum demand—decent, self-respecting jobs at fair pay. Demobilization allowances will be of little more value than is a meal eaten last week to a man who is hungry today. Bonuses will be like a shot of dope for temporary relief from pain. The WPA type of work will be regarded as an insult and a degradation by conquering soldiers.

This imperative demand for jobs for several million returning soldiers is only one phase of the problem. Other millions of men and women will be discharged from war plants. A complicating factor is the great increase in the efficiency of machinery under the stress of war necessity. Each worker can now produce more per man-hour than ever before, therefore fewer workers are needed to achieve a given volume.

SOME OF THE STATISTICS

How do the experts resolve these factors statistically?

It is estimated that in 1940, which was our latest peacetime year and a year of large industrial activity, we had 46,000,000 civilians employed. At present we have approximately 53,000,000 civilians employed. Making allowance for the retention of many soldiers in an enlarged army, for the return of many women workers to the home, for the retirement of aged persons from industry, for normal increase in population, Philip Murray, president of the C.I.O., fixes 55,000,000 employed as a goal that would be satisfactory to labor following the war.

Nine million more jobs than in prosperous 1940 is surely an objective of terrifying proportions and this increase of 20% in jobs involves an increase of 40% in production. And we must think in terms of production. Thinking of jobs rather than of production leads to such fallacies as House Bill No. 3677 introduced by Representative Klein, of New York. This bill, to quote its own language, is "to aid in the stabilization of the economic structure of the United States after the present war by amending the Fair Labor Standards Act to provide for the gradual reduction of the work week to 30 hours." From certain other persons has come the suggestion of a 30-hour week with 40 hours' pay immediately at the close of the war. Neither Mr. Klein nor other proponents of the 30-hour week contend that 40 hours of work per week is excessive. Their aim is to create more jobs by spreading the work. No doubt this suggestion is well meant and springs from a sincere desire to see "everybody employed." But it is simply a suggestion to lower the living standard of the whole nation, and that includes labor. We cannot have the things we want to eat and wear and enjoy except as a result of productive work. Again, labor is in substantial agreement with us, to judge from Mr. Murray's recent speech before the Economic Club of New York. "When the war ends," said Mr. Murray, "hours will be reduced by some amount, possibly to a national working average of less than 40 per week. But we must avoid the concealed unemployment that hides behind short hours, and means only a sharing of misery."

INCREASED NATIONAL OUTPUT

There is only one safe goal on which we dare focus, and that is an increase in the gross national output of goods and services. Only by producing more can we have more to divide. We cannot loaf our way back into prosperity, nor can we legislate prosperity.

The real challenge to industry, then, is the employment of 9,000,000 civilians more than were employed in 1940 and the production of $140,000,000,000 in nonwar goods and services compared with approximately $75,000,000,000 at present—$100,000,000,000 in 1940.

Of course the 55,000,000 will not all be employed in industry. Millions will be in agriculture, in the professions, in government services. But industry, as represented by the Committee for Economic Development, is accepting leadership and responsibility in meeting this great challenge.

The committee, composed of thousands of American business men, is completely independent and financed by the contributions of its members. Its present budget is several hundred thousand dollars a year. It is fortunate in having as its leader Paul G. Hoffman, president of the Studebaker Corp., an inspiring and dynamic personality. Mr. Hoffman is putting all his energy into convincing business that these enormous objectives are attainable and that every business man should do something about it *now* in his own corporation. And he urges on organized business a thorough housecleaning and a genuinely cooperative approach to all problems: "Any policies of business which are not in the general public interest should give way, as should any policies of government or labor," he said in a recent speech. "If we are going to win this peace, business men will have to be Americans first and business men second: labor leaders, Americans first and labor leaders second. This also goes for the farmers and government administrators."

ECONOMIC COMMITTEE'S WORK

The activities of the Committee for Economic Development are carried out by two major divisions—the field development division and the research division.

The field development division functions through 1,100 community groups in an attempt to reach every one of the 2,000,000 business enterprises in the United States with helpful information concerning postwar planning. It seeks to stimulate every business man to make intelligent plans immediately for the expansion of his business after the war. Some people assume that this is unnecessary, that each man's normal desire to make money will induce him to plan for as large a business as possible. This is not true. A surprisingly large number of business men are worn out and discouraged by the distressing problems and complexities they have encountered in recent years. Many of them, inspired by patriotism and war psychology, are now working to the limit of their mental and physical capacity, but feel like the industrialist who said, "When the war is over I'm going on a long, long fishing trip. My plant will belong to the government, it will be run by the union, if there are any profits they will be taken by taxation. I'm going to retire and live on my War Bonds."

Other business men are inclined to set as their objective the business done in some prewar year when they made a fairly satisfactory profit. They can attain such an objective without great personal effort or financial risk. If such thinking as this dominates the business community, it is mathematically certain that millions of the returning soldiers and the released war workers will have no prospect of employment. If vast unemployment is to be prevented business men must not plan conservatively. They must take risks on an unprecedented scale.

If business men are to be induced to accept the stress and strain and peril involved in greatly expanded production and employment they must be approached from the standpoint not only of possible profit but also with an appeal to patriotism and to pride in accomplishment. This the Committee for Economic Development is doing.

To assist each business man in efficient, practical planning the committee has prepared a "Handbook for Industrial Employers," helpful blanks and forms and case histories of businesses of varying sizes. A brief review of a few of these cases may be of interest.

In 1940 "Company Z" did $22,000,000 worth of business and employed 3,600 people. Today it is producing at the rate of $45,000,000 and employs 9,700 people. By a careful study of postwar opportunities, this company has come to the conclusion that it can maintain its present rate of production.

After the last war a large chemical concern lost 10 months in planning peacetime uses for its increased factory space. This time the management has on the shelf detailed blueprints for a dozen projects. A washing machine factory, now making an ammunition component, has a specific use scheduled for every one of its hundreds of tools and dies. An Ohio steel concern has asked customers to file estimates of their first year's requirements, so that it can schedule its own operations in advance. A medium-sized New Jersey company now making conduits for the Navy has assigned nine key men to do nothing but work on peacetime projects. A large electrical concern has a postwar committee of four vice presidents.

Since 1940 plants and equipment have been permitted to fall into disrepair. If we are going to have an overall output of $140,000,000,000, thousands of factories will have to be rebuilt, modernized, enlarged. A roofing company expects to spend between $2,000,000 and $3,000,000 on rehabilitation and improvements. And a large chemical company says that it has prepared a plant expansion program far exceeding that of any prewar year. All this means more jobs for workers in the construction and durable goods industries.

NEW PRODUCTS PLANNED

Many companies have completed plans to manufacture wholly different products or improvements on their old ones. A corporation now turning out explosives will produce a new plastic, an improved insecticide, a better soap ingredient, and several new types of lacquers. An aircraft company intends to switch over a large portion of its plant and machinery to prefabricated houses, while another airplane concern is spending millions on research in plywoods. And a famous optical company is getting ready to turn out a domestic freezing unit which, it hopes, will take the place of home canning.

Little companies as well as large are getting ready to cash in on the opportunities ahead. In Toledo, for example, a number of small concerns which cannot afford to maintain their own research departments are banding together to use the facilities of 26 local laboratories on a co-operative basis. The aim of each is to improve its product, reduce its cost, increase its sales, and thereby make more profit. In the process they'll employ more workers, distribute more wages, and create more purchasing power.

Each of the 1,100 local committees is autonomous, but all are urged to work according to a definite plan. This plan

★ RE-ELECTED BY INDIANA BAKERS ★

All officers were re-elected by the Indiana Bakers Association at its fortieth annual convention April 25-26. Left to right are Gar Fairly, Fort Wayne, president; Morris Jones, Richmond, vice president; Theodore Feucht, Indianapolis, treasurer, and Charles P. Ehlers, Indianapolis, secretary-manager.

involves, first, the stimulation of planning by manufacturers for maximum production.

If the city is in an agricultural section a subcommittee is formed to work with agricultural leaders in developing maximum production and employment in the tributary farm territory.

Then with adequate flow of money into the community projected from industry and agriculture the committee seeks to promote postwar planning by the construction industry, retailers and wholesalers, transportation and utilities.

An educational committee is then set up to work through schools, clergy, government, service clubs in establishing general appreciation of the program and objectives of the committee.

It is, of course, important not only that men be able to get work but that they be able to give work. Many of the returning soldiers expect to start or to re-establish businesses of their own. The committee in Albert Lea, Minn., raised a substantial sum to help establish new businesses.

But more than a fund of this kind is needed to encourage men to venture capital in the expansion of industry. The growth of industry needs a favorable climate as well as the growth of corn or cotton.

What that climate should be and how to attain it is being studied by the research division of the Committee for Economic Development.

The individual business man, in planning for expanded production, is faced with problems beyond his individual control, such as securing prompt payment on termination of war contracts; of disposing of government-owned surpluses and government-owned plants; of suspension of wartime government controls; problems growing out of federal taxation, foreign trade, etc.

The Committee for Economic Development does not know the answers but is seeking all possible light through a research staff composed of leading economists and scholars. The C.E.D. research committee is composed entirely of business men. Ralph E. Flanders, president, Jones & Lamson Machine Co., serves as chairman. To assist the research committee in planning and conducting studies is a research advisory board composed of outstanding social scientists. Professor Sumner H. Slichter of Harvard serves as chairman. The full-time staff of the C.E.D. is headed by Theodore O. Yntema, professor of economics on leave of absence from the University of Chicago.

When a subject of research has been approved by the research committee it is the task of the research director to select and employ the services of a specialist in the particular field of investigation. The individual so selected is solely responsible for the preparation of the study.

Such studies, if approved by Research Director Yntema and the research advisory board headed by Prof. Slichter, will be published at the expense of the C.E.D. The business men of the research committee and of the board of trustees reserve only the privilege of appending dissenting opinions.

There are so many policies of government, business and labor which affect business enterprise and employment that it has not been easy to select those which should have first consideration.

Intensive research is under way on the following problems, and others:

A study of incentives for business enterprise and the impact of taxation on these incentives. Directed by Dean C. E. Griffin of the School of Business, University of Michigan, assisted by Harold M. Groves, professor of economics, University of Wisconsin; W. A. Paton, professor of economics and accounting, University of Michigan, and Henry Simons, associate professor of economics, University of Chicago.

Liquidation of War Production. A. D. H. Kaplan, professor of economics, University of Denver.

Removal of wartime controls. J. M. Clark, professor of economics, Columbia University.

Monetary and banking policy in the transition period. John K. Langum, assistant vice president, Federal Reserve Bank of Chicago.

Summary report on changes in tax structure with particular reference to postwar transition. Harold M. Groves, professor of economics, University of Wisconsin.

Financing, reconversion and expansion of businesses. Charles Abbott, professor of finance, Graduate School of Business Administration, Harvard Business School.

Postwar problems of agriculture. Theodore Schultz, Department of Economics, University of Chicago.

Postwar problems of international trade and finance. Calvin B. Hoover, dean, Graduate School, Duke University.

These research studies will not in themselves constitute policy recommendations by the C.E.D. They will, however, form a background out of which will grow policy recommendations to be made by the board of trustees.

Because of the eminence of the scholars and their complete independence, it is our hope that these studies will have considerable influence on the future policies of business and labor and agriculture and government.

The research division suggests that many present policies have sprung from fears that are inherent in an economy of scarcity. Monopolistic practices in business result from fears that there won't be enough customers for our goods. Labor's support of feather-bedding rules, in opposition to incentive payment, has its roots in the conception that there are not enough jobs to go around. Restrictive measures in the field of agriculture spring from the fear of production in excess of demand. Government policies are a mere reflection of all these fears. There must be an abrupt about-face on the part of all of us if we are not to miss an unprecedented opportunity to achieve an economy of plenty.

PROBLEMS BEING MET NOW

Some of the so-called postwar problems are being met every day. More than 700,000 soldiers have already received honorable discharge. Industries, such as construction and the machine tool industry, are already confronted with reconversion problems. War contracts terminated during the past year and still pending unsettled have a dollar volume more than double that of all the war contracts terminated at the end of World War I, and at present rate of settlement it will take two years to dispose of these cancellations now pending.

Winning the war is the first consideration of every one of us but intelligent preparation for victory need not detract one iota from war work.

The Committee for Economic Development sincerely believes that it is possible for the United States to fight its way to a peacetime production of $140,000,000,000 in goods and services, employing 55,000,000 people. But this is possible only if government and business and labor and agriculture subordinate their group interests and work together for the common good. They must work together boldly, confidently, in the same spirit of co-operation and with the same assurance of success that our army, navy and air forces are showing against Nazi and Jap.

Caution, hesitation, timidity can defeat all plans for an era of abundance, an era in which more goods will be available to more people. Victory demands faith and courage—courage and faith.

Enrichment

(Continued from page 19.)

sential amino acids forming part of the protein. Amino acids are being manufactured on a larger scale than heretofore, and it is possible that some day one or two of these amino acids may be added to flour. Striking impetus has been given these problems because of the necessity of feeding millions of undernourished victims of war.

It is well known that people eat certain foods because they like them, and not because they are good for their health. All of us know the public likes white bread better than the darker varieties. If we can give them what they like and still provide a more nutritionally valuable food, we are on sound ground and less likely to lose our position in relation to other foods.

FEEDING EXPERIMENTS NEEDED

More than anything else, we need to be sure of the value of any addition we make to flour. In order to secure the information needed, some large scale mass feeding experiments with human subjects should be instituted without delay. Such projects would show results most rapidly if we choose a group now subsisting on a poor diet. There has been some preliminary discussion of such experiments in Newfoundland and Puerto Rico. To be as complete as we would like, such experiments would need to be carefully outlined and would be costly. Nevertheless, if we could compare for a year or two health records of a group divided so that the diets were the same except for enriched and nonenriched bread, some important facts could be gathered. Of necessity preliminary experiments must be done on small animals or with small groups. Present work on vitamin levels of army men subsisting on excellent diets is extremely useful but still does not give us the information we need. We must know the over-all picture of the value of the enrichment program on human subjects subsisting on inadequate diets.

Many of you are thinking that none of this will sell more flour; I think it will because enrichment enables us to compete better with other foods whose nutritional desirability is a growing factor in their sales. We know people will always eat bread, and it is our responsibility that the flour from which bread is baked is as nutritious and palatable a food as nature and science, working together, can make it.

★ ★ ★

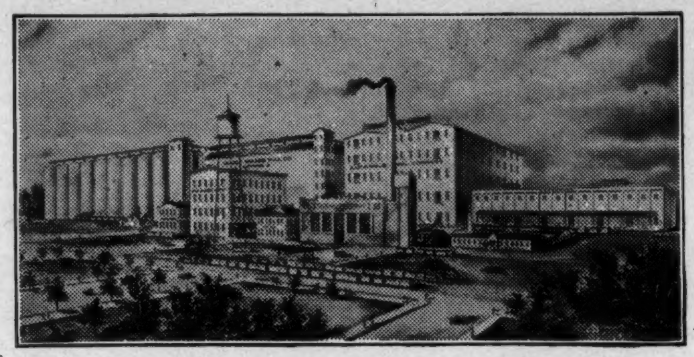
HEROIC CAMERAMAN

Jack Barnett, Fox-Movietone cameraman, was luncheon speaker for the federation on the closing day of the convention. Graphically and colloquially he told the story of heroic adventures on the European fronts.

★ ★ ★

SPRING WHEAT FLOURS of HIGHEST QUALITY....

All our leading patent flours are now optionally available enriched with Vitamin B_1, Niacin, Iron and Riboflavin to the levels required by the Food and Drug Administration.



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TEA TABLE OVENSPRING BIG VALUE

Fine Flours...

. . . milled from the cream of this great Kansas wheatfield by millers who prize their quality and quality-reputation above every transient advantage.

Dependable quality and value at fair price.

THE WEBER FLOUR MILLS CO. • SALINA, KANSAS

KING'S FLOURS

are Made in Minnesota ... and Nowhere Else

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MINNESOTA . . . the state that has made MORE FLOUR than any other state in the Union.

MINNESOTA . . . the state that makes the BEST FLOUR in the world.

Buy flour that is guaranteed "Made in Minnesota"

H. H. KING FLOUR MILLS COMPANY
MINNEAPOLIS, MINNESOTA

"SUPERFLOUR"
"BUFFALO"

Tops in Bakery Flours

★ ★

THE WILLIS NORTON CO.

Quality Millers Since 1879

Capacity 1,500 Bbls. WICHITA, KANSAS

Exceptional Bakery Flours

TWELVE-40 NO-RISK PLA-SAFE

THE ABILENE FLOUR MILLS CO.
ABILENE, KANSAS
Capacity 3,000 Cwts. Daily *Grain Storage 1,000,000 Bus.*

ARCHER-DANIELS-MIDLAND COMPANY

J. M. CHILTON, Mgr. Grain Dept.

GRAIN MERCHANTS
Milling Wheat and Coarse Grains
MINNEAPOLIS

MILWAUKEE, WIS.
BUFFALO, N. Y.
KANSAS CITY, MO.
SAN FRANCISCO, CAL.
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MINNESOTA GIRL FLOUR . . . . . long on quality!

Spring Wheat Fancy Patent Family Flour

Enriched with Vitamins and Iron

CAPITAL FLOUR MILLS, Inc.
General Offices: Minneapolis Mills: St. Paul

HEAVY RAINS OVER MISSISSIPPI VALLEY FLOOD MUCH WHEAT LAND

Crests Approximate or Exceed 1943 and 1903 High Water Marks—Farm Work and Crop Growth Progress Rapidly in Other Areas

Reaction to much warmer weather in the east and heavy rains over the Mississippi valley were noteworthy features of the weather during the last week. More rains followed receding floods in some regions and already critical conditions were made worse.

Flood crests moving downstream resulted in high water levels approximating or exceeding those of the May and June, 1943, and the June, 1903, floods in the lower Missouri river valley. While the Missouri river and Mississippi at St. Louis were falling, large areas remained flooded. The Arkansas river and streams in Kansas, Oklahoma, Missouri and Iowa had receded, but moderate rains later brought recurrent overflows to some streams in those states.

Mostly light rainfall in the eastern states with much sunny weather made generally favorable agricultural conditions for both farm work and the growth of vegetation. Improvement has been especially marked in the northeast and middle Atlantic area, while there was less rain in the eastern Ohio valley and lake region, which permitted rather active resumption of farm work. Farming operations in the western Ohio, central Mississippi and lower Missouri valleys continued inactive or at a standstill, although some preparation of soil and seeding were reported from Indiana and Illinois.

Conditions were favorable and farm work made good progress in northern states west of the lake region, including active resumption in Iowa where tractors have been equipped with headlights for night work. In the central and northern states from the Rockies westward, substantial to heavy precipitation occurred, being decidedly favorable in many places especially in the Pacific northwest. Work, however, was interrupted in Minnesota.

Winter wheat made mostly good growth in the Ohio valley, with some joining and some in boot. Over 100,000 acres of winter wheat were reported lost through floods in Missouri. Much wheat needs rain in Texas, but condition was good in the panhandle, while in Oklahoma progress ranged from fair to good. In the great plains from Kansas northward, progress was mostly good. Some areas of Nebraska report ample subsoil moisture for the first time since the drouth of the middle 30's. Winter wheat is generally making good advance in the Northwest, especially so in some portions of Washington.

Much spring wheat seeding has been accomplished in the Dakotas and Minnesota and the moisture situation is generally favorable for good germination and early growth. The more favorable weather conditions have had a beneficial effect on the progress of oat seeding. In Iowa, this work has been rushed 24 hours a day and more than 70% has been seeded. Sixty percent of the intended oat acreage has been seeded in the Ohio valley and the work is making rapid progress.

Much corn is up in the southern part of Oklahoma, while a little has been seeded in southern Missouri. In Iowa, plowing has gotten a good start, but much land will be hard to reduce to proper seed bed condition because of previous wetness, especially if dry, windy weather should prevail.

TOO MUCH RAIN IN KANSAS

J. F. Moyer, secretary of the Kansas Grain, Feed and Seed Dealers Association, expresses the fear that heavy rains over virtually all of Kansas during the past several weeks have reached the point that will prove detrimental rather than helpful to crops in that state. He states that in low lands considerable acreage of fall sown wheat and spring planted grains has been reported lost, and in all areas spring seeding has been delayed far beyond preferred planting dates. However, it is expected that the acreage will be planted to later maturing crops and it is still hoped that Kansas may produce a large crop of badly needed feed grains.

C. W. Lane, special representative of the Santa Fe railroad, on the other hand, reports that Kansas is virtually assured of a wheat crop that is bound to be large, provided favorable conditions exist between now and harvest. Condition of wheat ranges from good in the eastern third of the state to excellent in the main producing belt and poor to fair farther west. Mr. Lane states that seldom has the outlook for wheat, which was permitted to germinate at the proper time, been more promising. This situation applies to a big area and back of it are indications that a crop of around 150,000,000 bus may be realized.

NO GREENBUGS IN OKLAHOMA

In Oklahoma, damage to small grain crops by high winds was offset by beneficial rains during the week. Early sown wheat made good progress, but late planted wheat is poor, and in some counties where rainfall has been excessive, wheat is abnormally rank. Greenbugs are conspicuously absent this year. Oats and barley planted last fall are heading. Corn planting is practically completed and most of the crop is up to a stand with growth retarded by cool weather and high winds. Fields are being made ready for planting of grain sorghums.

RAINS UPSET MINNESOTA PLANS

Seeding of spring wheat in Minnesota progressed rapidly until halted by heavy rains, which drastically upset farmers' plans and resulted in University of Minnesota extension officials surveying the situation with the view of requesting the war department to send more war prisoners into the state to help with farm work. Arrangements already have been made to have some 2,000 foreign laborers imported between June 1 and June 20, according to Prof. Paul E. Miller of the university.

WE WISH to express our sincere appreciation to the milling and mill supply industries for their many remembrances at the time of the recent loss of our president, S. H. Stoltzfus.

We also are fortunate at this time to announce that Mr. Paul K. Fisher, associated with the milling industry for many years, has been appointed as General Manager of our company. The company will operate as in the past, and through the services of Mr. Fisher, will be in a position to furnish both practical and technical services in connection with your mill requirements.

By this same means, we wish to express our appreciation for the business which we have enjoyed in the past, and to solicit your future inquiries and orders in connection with your machinery and supply requirements.

We believe the service which we are able to offer will warrant your continued patronage.

GENERAL MILL EQUIPMENT COMPANY
2321-23 Pennsylvania Ave. KANSAS CITY 10, MISSOURI

Federation

(Continued from page 16.)

small miller. Be that as it may, I say to you now that the leadership in this price action does not fall in the laps of the small and medium sized mills.

"Not a single additional barrel of flour in total has been sold as a result of this action.

ENDANGERS SUBSIDY

"In my judgment, under present operating conditions which involve ceilings on both flour and feed, this policy is fundamentally unsound, shortsighted and endangering to the whole subsidy program. I speak now to some of the representatives of the large and powerful milling groups. I use the word some because I know that several of the largest companies in our organization have gone to extreme lengths to resist this price action. However, I say to all of you that try as you may, you cannot escape the positions of leadership with reasonable regard for the long range viewpoint and the well being of the industry as a whole.

NOT A POLITICAL MATTER

"I disagree with many of my acquaintances who believe that a change of the political party in power or the end of the war will quickly bring about the liquidation of many federal agencies and suspend most of the burdensome and impractical regulations now imposed upon business.

"In my judgment, this will only come about when you see to it that your representatives in government are men pledged to the support of sound practical common sense policies for agriculture and for industry.

POSTWAR PLANNING

"Recent months have wrought great changes in the habits of flour buyers. You gentlemen might well consider that unless your postwar plan is both sound and aggressive, this industry may find itself a secondary one instead of a primary one as regards the end use of its products.

"It is my opinion that in a large degree, the ultimate success of any postwar plan by industry will hinge primarily on the postwar attitude of government and labor toward business.

"In the legislative field, the subject of grade labeling and the mandatory control of profits must be watched very carefully because they are of vital importance to all of us.

"In the tax field especially, the best results of postwar planning can only be obtained if the tax structure allows industry in general to retain sufficient funds to carry out plans for postwar expansion which in themselves must necessarily create the widespread additional re-employment of labor.

"While sound thinking on these subjects is necessary, let us not forget that, for the present, we all have only one major job and that is to do all we can toward helping win the war. We should keep this thought constantly before us.

"And now in closing, may I express the hope that we, who are a part of one of the oldest and most important industries in existence, may find within ourselves in the year ahead an abiding faith in the ultimate well being of our nation, our industry and ourselves."

WOLF'S PREMIUM FLOUR

As fine a flour as you will find milled from the finest Turkey wheat in the heart of Kansas in

An Independent Mill

WOLF MILLING CO.
ELLINWOOD, KANSAS

PREMIUM VALUES!

Henkel's EXTRA FANCY
BREAD FLOURS
are milled from the finest premium wheats money can buy.

THE HENKEL FLOUR MILLS
DETROIT MICHIGAN

Buy War Bonds and Stamps

ALL TYPES OF FLOURS

To Meet Modern Baking Needs

FEDERAL MILL, Inc.
Lockport, N. Y.

FINGER LAKES AND HUDSON FLOUR MILLS, Inc.
Geneva, N. Y.

WHEAT FLOUR *Mills At* RYE FLOUR
GENEVA, N. Y. TROY, N. Y.

Chickasha Milling Co.

Capacity 800 bbls — CHICKASHA OKLA. — Cable Address "Washita"

Manufacturers of High-Grade Hard Wheat Flour
Foreign and Domestic Trade Solicited
Member Millers' National Federation

Western King Flour
Uniform Bakery Flour
MANEY MILLING CO.
Omaha, Neb.

A New Brand on the Milling Horizon

BIRCHMONT

Typically Minnesota—a short patent that will stand comparison

— and —

WHITE GOLD
(Standard Patent)

ST. CLOUD MILLING CO.
ST. CLOUD, MINNESOTA
300 Bbls Capacity

"Hunter's CREAM"
A Kansas Turkey Wheat Flour

that for more than sixty years has stood at the very top of the fine quality list.

The Hunter Milling Co.
Wellington, Kansas

ACME RYE
A HIGH QUALITY WISCONSIN RYE FLOUR
All Grades
FISHER-FALLGATTER MILLING CO.
WAUPACA WISCONSIN

"CREMO"
Just the Cream of Hard Wheat
CROOKSTON MILLING CO.
CROOKSTON, MINN.

"Whitewater Flour"
Ground Where the Best Wheat Is Grown
WHITEWATER FLOUR MILLS CO.
Whitewater, Kansas

THE ROSS MILLING CO.
Choice Quality Flour
Plain and Selfrising
OTTAWA KANSAS

A Real Gem in Flour
KANSAS DIAMOND
Made by
Arkansas City Flour Mills Co.
Arkansas City, Kansas
Daily Capacity 2,000 bbls

We are always ready to fill your requirements of
MILLING WHEAT
MOORE-SEAVER GRAIN CO.
Operating Kansas City Southern Elevator Kansas City, Mo.

PAGE'S FLOURS
THE THOMAS PAGE MILL CO.
Topeka, Kansas

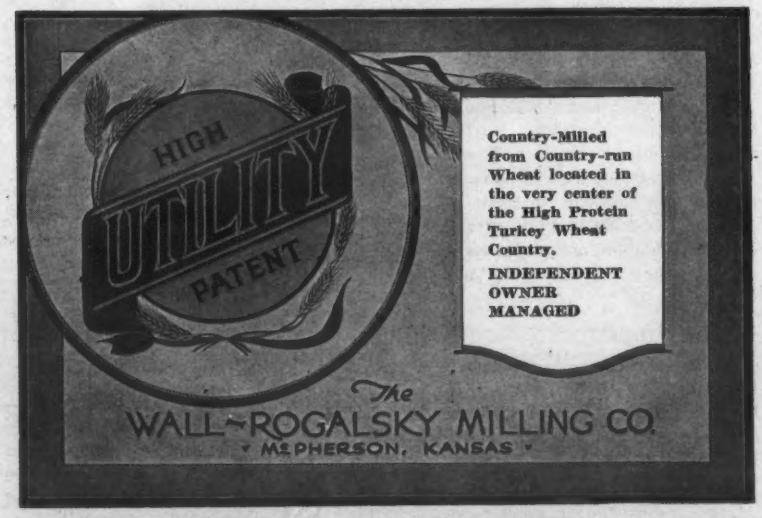
KING MIDAS FLOUR
KING MIDAS FLOUR MILLS
Minneapolis, U. S. A.

SUNNY KANSAS

"Good Morning—
we are pleased
but not at all surprised
to learn that you liked
your first car of
'Sunny Kansas'
even better than we
promised you would."

★ ★

The Wichita Flour Mills Co.
5,000 Sacks Capacity 1,000,000 Bushels Storage
WICHITA : : : KANSAS



LIBERTY FLOUR

GEORGE URBAN MILLING CO., Buffalo, N. Y.

MOSTLY PERSONAL

MARRIED

Jay Burns, head of the Bryo Co., Chicago, was married to Mrs. May Taylor Norton on May 6. They will be at home after June 1 at 2155 Bennett Ave., Evanston, Ill. Widely known in the milling and baking industries, Mr. Burns formerly was president of the Midland Bakeries Co.

AT HEADQUARTERS

R. J. Harrington, Buffalo manager for the Russell-Miller Milling Co., E. J. Gerard, manager at Dallas, and James R. Mulroy, manager of the Stanard-Tilton mill at Alton, Ill., are visitors at headquarters in Minneapolis, following the Millers National Federation meeting in Chicago.

CALLS ON TRADE

T. L. Brown, manager of the durum department Commander-Larabee Milling Co., Minneapolis, called on the New York trade recently.

AT NEW YORK OFFICE

A. J. Oberg, sales manager for wheat flours, King Midas Flour Mills, Minneapolis, visited the mill's New York offices.

VISITS PITTSBURGH

Herman A. Berkemeyer, sales manager for Saxony Mills, St. Louis, visited for several days with Phil A. Mohler, Pittsburgh flour salesman. He was returning to St. Louis after a visit with his daughter at Falls Church, Va.

IN HOSPITAL

George E. Greiner, of the Greiner Bakery, Indiana, Pa., is in the hospital with pneumonia.

TROUT CATCH GOOD

J. D. Williamson, president of Duquesne Baking Co., Pittsburgh, and his son, James W. Williamson, of the Duquesne firm, had a recent trout fishing vacation at Williamson, Pa., the town their ancestors founded. The trout catch was very good.

DINNER GUESTS

John H. Bailey, former manager National Mill, Toledo, owned by National Biscuit Co., and now attached to the New York office, and C. P. Montgomery, executive vice president of the National Biscuit Co., were in Toledo May 4 and were guests at a dinner of grain, milling and railroad interests at the Maumee River Yacht Club, arranged by R. E. Thompson and Joe Shambarger of the Central Inspection and Weighing Bureau.

VISITS TOLEDO

Art R. Coleman, sales manager, Weber Flour Mills Co., Salina, Kansas, formerly with Marion (Ohio) Milling Co., stopped off at Toledo, May 4, during a visit to the central states.

IN KANSAS CITY

John O. Morrissey of John F. Morrissey & Co., St. Louis, was in Kansas City on business this week.

CHICAGO VISITORS

Among visitors in Chicago last week were: Perry Hayden, Hayden Flour Mills, Inc., Tecumseh, Mich; A. H. Krueger, Millers National Federation, Washington, D. C; L. J. Morgan and Charles R. McClave, both of the War Food Administration, Washington, D. C.

VISIT SOUTHWEST

E. R. McDonald and Carl L. Blesch, of Home Mill & Grain Co., Inc., Mount Vernon, Ind., were in Kansas City early last week before the meeting of the Millers National Federation in Chicago. Mr. McDonald formerly was in the milling business in the Southwest.

DOUBLE HEADER

George P. Urban, president of the George Urban Milling Co., Buffalo, played a double-header in Chicago last week, attending both the meetings of the Millers National Federation and the Millers National Insurance Co.

VISITING SON

C. C. Cowan, manager of the Southland Mill & Elevator Co., Nashville, Tenn., and Mrs. Cowan last week visited their son, John, who is in the naval training program at Notre Dame University, South Bend. The three spent the week-end in Chicago.

RAINS CAUSE DELAY

Cohen T. Williams, manager of the Royal Flour Co., Nashville, has returned from a week's trip through the South, calling on the flour trade. Mr. Williams says that rain in the South and Southeast has hindered farm work and that corn and cotton have not even been planted in some sections.

AT BOSTON OFFICE

I. C. Maghran, from the Buffalo office of Pillsbury Flour Mills Co., visited the firm's Boston office for several days last week.

BUSINESS TRIP

J. U. Lemmon, Jr., Boston, vice president and New England manager of the Doughnut Corp. of America, has been on a business trip to New York and Washington.

IN MINNEAPOLIS

Paul R. Quarnberg, of the Tri-State Milling Co., Rapid City, S. D., was a Minneapolis visitor last week.

TRAFFIC MANAGER

L. D. Veltum, grain rate expert for the Minneapolis Traffic Association, left last week-end for Alton, Ill., to become traffic manager for the Stanard-Tilton mill of the Russell-Miller Milling Co. Mr. Veltum was for many years traffic manager for the Northwestern Consolidated Milling Co.

HONORED GUEST

F. Peavey Heffelfinger, who retired May 1 as Minneapolis regional director of the War Production Board to return to private business, will be honor guest at a dinner at the Minikahda Club, May 10, tendered him by a large group of local business men, headed by Harry A. Bullis, president of General Mills, Inc. D. D. Davis, former president of General Mills, now vice chairman of the War Production Board in Washington, will be the principal speaker. Mr. Heffelfinger is vice president of F. H. Peavey & Co.

—BREAD IS THE STAFF OF LIFE—

United States Visible Grain Supply

Visible supply of grain in the United States as compiled by the secretary of the Chicago Board of Trade, in bushels (000's omitted), of date May 6:

	Wheat	Corn	Oats	Rye	B'ley
Baltimore	4,642	177	34	86	1
Boston ...	..	17	..	..	..
Buffalo ..	11,522	919	3,472	3,842	910
Afloat ..	132	..	..	..	..
Chicago ..	9,844	360	374	12,951	651
Afloat ..	265	..	..	105	..
Duluth ...	25,060	3	148	514	1,633
Ft. Worth	3,477	510	109	25	27
Galveston	2,770	..	..	..	..
Hutchinson	1,646	..	..	..	..
Indianapolis	1,580	625	61	74	..
Kan. City	7,984	1,891	55	309	77
Milwaukee	1,968	..	2	82	2,858
Mpls.	21,347	7	470	3,935	2,121
N. Orleans	865	19	5	..	..
New York	711	10	..	...	1
Omaha ...	3,412	954	79	161	48
Peoria ...	368	73	..	..	111
P'ladelphia	2,223	289	32	312	2
Sioux C. ..	241	12	13	33	28
St. Jos. ...	1,736	839	333	14	27
St. Louis..	2,293	513	47	70	147
Wichita ..	1,016	11	5	..	7
On Lakes..	1,480	..	..	..	..
Total ...106,582	7,729	5,839	22,513	8,648	
May 8, '43 156,348	28,733	5,119	19,967	6,748	

Millfeed Receipts and Shipments

Receipts and shipments of millfeed at the principal distributing centers for the week ending May 6, in tons, with comparisons:

	Receipts		Shipments	
	1944	1943	1944	1943
Minneapolis ...	...	...	22,770	12,630
Kansas City ..	275	1,000	3,225	4,775
Philadelphia ..	200	300	...	...
Milwaukee	...	40	3,330	2,740

OBITUARY

WILLIAM H. BUCK

William H. Buck, 56 years of age, of Buffalo, N. Y., who until his retirement last year, was assistant general superintendent of the Washburn Crosby Co. mills, died April 28 after a short illness. He had been employed by General Mills, Inc., for 35 years, coming to Buffalo after his graduation as a mechanical engineer from the Pennsylvania State College. He was a member of the Buffalo Club, Buffalo Country Club and Trap & Field Club. Surviving is a widow. He was buried in Bradford, Pa.

GEORGE F. FOLSOM

George F. Folsom, president of the Novelty Mill Co., Seattle, died in a Seattle hospital May 1, following a three-day illness. He was 79 years old. The mills which he actively directed until his recent illness were incorporated under his direction more than 50 years ago.

SEMOLINA MARKETS

Minneapolis: Aside from stir caused by government buying last week, little action in durum market; government bought approximately 130,000 sacks, bulk of it going to only a few firms; domestic trade still uninterested, slow about ordering out semolinas.

In the week ended May 6, nine Northwest companies made 151,750 sacks durum products against 147,366 in the previous week.

Pittsburgh: Durum semolina sales at new low point. Quotations shaded 10c under ceilings. Warm weather has affected macaroni sales adversely. No. 1 fancy semolina $3.88@3.98, secondary grade $3.78@3.88.

St. Louis: Prices steady. Sales slow, shipping instructions fair; first grade semolina (ceiling price) $3.99, granular $3.84, No. 3 $3.73, fancy patent $3.99.

Chicago: Business quiet; only a few small sales being made. Directions fair; No. 1 semolina $3.75, standard No. 1 $3.65.

Philadelphia: Offerings moderate, trade quiet. Prices show little change; No. 1 fancy $4.03; No. 1 regular $3.93.

Buffalo: Situation practically unchanged; buying interest and demand limited to nearby requirements with average buyer well booked on old contracts. No apreciable pick-up in macaroni production. Trend steady, supply ample. No. 1 $3.98; durum fancy patent $3.98; macaroni flour $3.75; first clear $2.96, all prices nominal.

BAKERS FACE CUT IN WAXED PAPER SUPPLY

May Take Form of Lighter Weights or Tonnage Cut—Latter Method Favored

WASHINGTON, D. C.—Bakers shortly will be faced with an adjustment of waxed paper wrapping operations resulting from suddenly increased military requirements, officials here state. Orders have been sent to mills curtailing allocation for pulp for civilian lines. While a waxed paper cut for the bakery trade appears inescapable it has not been decided how this action will be accomplished. The alternatives are a degrading of present paper weights or a direct reduction of tonnage.

It is not believed that the use of lighter weight papers would work out satisfactorily either in wrapping machine operation or in subsequent handling of bread in distribution channels. In both instances experience has shown that lighter papers were subject to high percentage of breakage. Trade sources say that use of lighter papers would ultimately lead to considerable waste and defeat the economy purpose.

Some packaging specialists think that a direct cut in paper tonnage could be handled by the baking industry through paper use economies and would ultimately prove a more satisfactory solution for baking industry.

While there has been no announcement of extent of cut facing the baking industry, a figure of 10% has been rumored. An index may be found in the following curtailments ordered in the second quarter for pulp consumption: grease-proof 763 tons, glassine 3,148, vegetable parchment 2,184, waxing 6,048, transparent cellulose sheeting 2,388.

The method by which baking industry cuts will be made will be decided by the War Food Administration.

RYE PRODUCTS

Minneapolis and interior Minnesota: Quiet; a scattering of carlot sales; at present price levels, trade not disposed to take hold in volume; bakers generally regard prices too high; quotations down 6c cwt for week; pure white rye flour $3.40@3.46 cwt, in cottons, f.o.b. Minneapolis, pure medium $3.30@$3.36, pure dark $2.99@3.06.

St. Louis: Prices advanced 6c. Sales and shipping directions fair; pure white $3.80, medium $3.70, dark $3.25, rye meal $3.55.

Pittsburgh: Sales very slow. Few quotations asked, no further cut in prices noted; rye flour, fancy white $3.63@3.77, medium grade $3.53@3.67.

Portland: Pure dark rye, $3.72, medium dark, $3.77, Wisconsin pure straight, $4.20, Wisconsin white patent, $4.37.

Chicago: Very little activity; few sales made, these chiefly in smaller lots. Directions fair; white patent $3.30@3.58, medium $3.20@3.48, dark $2.80@3.30.

Philadelphia: Market somewhat unsettled and irregular; undertone easy. Offerings ample at revised figures; buyers cautious, operating only as impelled by immediate necessity; white patent $3.65@3.80.

Buffalo: Demand fair; trend steady; supply ample; white $3.80, medium $3.70, dark $3.30.

New York: As values advanced moderate business dropped off; pure white patents, $3.65@3.73.

—BREAD IS THE STAFF OF LIFE—

Bonded Grain in the United States

Bonded grain in the United States May 6, in bushels (000's omitted):

	Wheat	Oats	Rye	Barley
Baltimore	1,884	..	..	..
Boston	52	..	..	..
Buffalo	1,191	101	552	..
Afloat	29	..	..	..
Duluth	..	..	..	78
Fort Worth	1,207	..	..	..
Lakes	716	83	..	394
New York	1,742	..	..	..
Philadelphia	581	..	..	..
Totals	7,402	184	552	472
April 29, 1944 ...	9,181	1,882	736	319

A new development which greatly extends fermentation tolerance. Provides more time for "cutting over" or giving dough extra punches. If you want a flour which will stand abuse, write or wire

NEBRASKA CONSOLIDATED MILLS COMPANY
1321 N. 16th St. OMAHA, NEBRASKA

"DURAMBER"
SEMOLINA
FANCY No. 1
Milled from Carefully Selected
AMBER DURUM WHEAT
AMBER MILLING CO.
MINNEAPOLIS
Cable Address: "AMBERMILCO"

DIXIE LILY
A flour without an equal anywhere
Plain and Self-rising
THE BUHLER MILL & ELEVATOR CO.
BUHLER, KANSAS
Southern Sales Office
933-35 Exchange Bldg., Memphis, Tenn.

BLAIR'S Certified FLOUR FEEDS
BLAIR MILLING CO., Atchison, Kans.

Bowersock Mills & Power Co.
LAWRENCE, KANSAS
ZEPHYR FLOUR
AS FINE A BAKING FLOUR AS A BAKER CAN BUY AT ANY PRICE
Established 1874 1,500 BARRELS DAILY

Pfeffer Milling Company
Manufacturers of Pure High-Grade Winter Wheat Flour
Brands: Lebanon Bell, Flake White, Fluffy Ruffles
LEBANON, ILL.
Member Millers' National Federation
Capacity: 1,000 bbls

"DIAMOND D"
A High Grade Baker's Spring Patent
Milled Under Laboratory Control from Montana Spring Wheat
Sheridan Flouring Mills, Inc.
SHERIDAN, WYOMING

"Sasnak Flour"
For Discriminating Eastern Buyers
ENNS MILLING CO., Inman, Kan.

The Moundridge Milling Co.
FAMILY FLOUR — BAKERY FLOUR
CRACKER FLOUR
SPECIALTY PRODUCTS
General Offices: MOUNDRIDGE, KANSAS

The Standard Others Strive to Reach
WHITE SWAN
FLOUR
SPRINGFIELD MILLING CORPORATION
MINNEAPOLIS • MINNESOTA

The Rodney Milling Co.
13,000 CWTS CAPACITY
KANSAS CITY, MISSOURI
"Heart of America"
FLOUR
CHICAGO OFFICE:
Kelly Flour Co., 919 N. Michigan Ave.
BOSTON OFFICE:
Seaboard Allied Milling Corporation
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Two of the Nation's Finest Flours
"AMERICAN EAGLE"
"THE ADMIRAL"
The H. D. LEE FLOUR MILLS CO.
Salina, Kansas

Gallatin Valley Milling Co.
MONTANA
Flours and Grain
D. R. FISHER, Mgr. BELGRADE, MONT.

SEARCHLIGHT
SHORT PATENT FLOUR
Only highest grades spring wheat used; produces excellent bread of fine flavor. Ask for samples.
WISCONSIN MILLING CO.
Menomonie, Wis.

THE WALNUT CREEK MILLING CO.
Millers of Fine, Country-Milled Kansas Wheat Flours
Since 1877
GREAT BEND, KANSAS

King Milling Company
High Grade Michigan Soft Wheat Flour, Plain and Self-Rising
Successful Millers for Fifty Years
LOWELL, MICHIGAN

HIGH GLUTEN FLOURS
For Bakers
The Morrison Milling Co.
Denton, Texas
Emphatically Independent

We specialize in designing and engraving for Millers and the Grain Trade
Holland Engraving Co.
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BLACK BROS. FLOUR MILLS
1863-1941
FLOUR 1,000 BBLS.
STOCK FEED 250 TONS
WYMORE • NEBRASKA

"KELLY'S FAMOUS" FLOUR
IS . . .
KANSAS' FAMOUS FLOUR
★ ★ ★ ★ ★ ★
THE WM. KELLY MILLING CO.
Capacity 2,500 Barrels HUTCHINSON, KANSAS

The ROBINSON MILLING COMPANY
SALINA, KANSAS
ACCEPTED AMERICAN MEDICAL ASSN.

Van Dusen Harrington Co.
• *Grain Merchants* •
BUSINESS FOUNDED 1852
MINNEAPOLIS DULUTH

MARKETS IN DETAIL

U. S. FLOUR MARKETS

THE SOUTHWEST

Kansas City: Although buyers' interest has improved, actual sales have not increased. Sale 36% of capacity last week compared with 41% previous week and 33% year ago.

Bakers waiting before buying, also watching for market effect of new crop, which appears to be in good condition now. Millers holding prices firmer now wheat almost unobtainable. This combination of factors discourages big business.

However, since it appears crop can get no better and future news probably will be somewhat bullish, and also because of likelihood that wheat will be tight up to or through new movement, millers anticipate lively bakery business within next month. Backlogs thin. When buying does start it may be brisk, particularly since governmental requirements will again be large sometime soon.

Clears still available in large quantities; some anxious sellers again in market with prices as low as they have been during any period in this crop. Heavy production of clears and fact that some are backing up in buyers' warehouses keep the market soft. Directions better.

Quotations, May 6: established brands of family flour $3.95@4.05, bakers short patent $3.30, standard patent $3.25, straight grade $3.20, first clears $2.55@2.75, second clears $2.40@2.60, low grade $2.35@2.50.

Three mills report domestic business active, 5 fair, 4 quiet, 7 slow and 8 dull.

Oklahoma City: Some improvement in sales, averaging 38% compared to 25 previous week. Bakers took 60% of bookings and family buyers 40. Operation averaged 78% compared to 75 previous week. No change in prices. Quotations, May 6: hard wheat short patent flour $4.10@4.66, soft wheat short patent $4.10@4.66, standard patent $4@4.46, bakers short patent $3.75, bakers standard $3.65.

Omaha: Mills report sales 15@35% of capacity. Shipping directions slow. Quotations, May 6: family short patent $3.65, standard $3.27, bakers short patent $3.36, standard $3.19.

Wichita: Sales from 25 to 100%; directions from 90 to 100% or more. Mills operating to extent of labor supply from 75 to 100%. Prices steady.

Hutchinson: Mills reported business slow, only small lots moving. Shipping directions slow, prices firm.

Texas: Demand about same. Principally routine business, regular family customers with a little more bakers business, enough to run sales of a few mills to fully 100% of capacity. Backlog of unfilled orders represent about 35 days full time run average. Operations holding steady at fully 75% of capacity average. Many larger mills running as near 100% as labor and other conditions will permit. Prices about unchanged. Quotations, May 6: extra high patent 50's $4.15@4.30, high patent $3.90@4.05, standard bakers, under 44% ash, 100's $3.52 (ceiling), first clears 100's $3.00@$3.10, all delivered Texas Common Points.

THE NORTHWEST

Minneapolis: Very quiet flour market, with bookings light as at any time on crop; bakers well bought ahead and seem to have run into a lull in demand for products. Bookings by northwestern mills last week amounted to only 27% of capacity, compared with 67% a week earlier, and 36% a year ago. Shipping directions still below expectations.

Quotations May 9: established brands family flour, enriched $4.10@4.50, high gluten bakery flours $3.54, bakery short patent $3.44, first patent $3.44, standard patent $3.34, fancy clear $3.40@3.44, first clear $3.20@3.34, second clear $2.70@2.85, whole wheat $3.54.

Interior mills, including Duluth: Only scattered small-lot sales; trade shows little interest in either prompt or deferred shipment supplies; some mills report some improvement in volume of shipping directions, but majority concerned over lack of same; millfeed inquiry still far in excess of production.

THE CENTRAL WEST

Chicago: Market slow with a slight improvement. Buying far from general; sales in small lots only of fill-in type. Shipping directions show little improvement. Family continues quiet, only scattered sales. Deliveries fair. Quotations, May 6: spring top $3.30@3.57, standard patent $3.20@3.47, first clear $2.75@3.45, second clear $2.00, family flour $4.51; hard winter short patent $3.45@3.57, 95% patent $3.32@3.47, first clear $2.65@3.20, soft winter short patent $4.06@4.72, standard patent $3.50@4.54, first clear $3.35@3.60.

St. Louis: Outside of a few scattered cars, nothing reported placed on books. Buyers standing on side-lines awaiting developments. Clear demand off sharply. Prices unchanged. Small bakers filling wants from old bookings. No new business being done. Shipping directions improved.

Quotations, May 6: soft wheat baker patent (ceiling price) $3.98, cake flour $4.58, stright $3.74, family soft wheat short patent $4.29, straight and 95% $4.29, first clear $3.32@3.75; hard wheat baker patent (ceiling price) $3.53, family short patent $3.68@3.94, straight and 95% $3.43, first clear $2.68@3.06; spring wheat baker short patent $3.53, straight $3.43.

Toledo: Not much doing—very quiet, sale of flour slow. While output has held up exceptionally well in some instances, in other cases it has fallen off notably. General decline in production imminent. Difficult to understand what has happened to soft wheat flour consumption and to account for continued absence of any demand and return to market except on assumption that other flours, possibly low-protein hard or Pacific northwestern, have displaced them.

EASTERN STATES

Buffalo: Sales continue spotty. Buyers relying on old contracts and ordering out flour as needed rather than stocking up. Some rounding out buying mostly in small lots, and a few exceptionally large contracts but by and large trade more or less awaiting developments. Directions only fair. Millers look for pick-up in near future in directions from bakery branch because of warmer weather. First clears fair. Production shows an increase for second successive week but not enough to relieve tight situation prevailing in demand for by-products. Foreign trade uneventful.

Quotations, May 6: spring first patent $3.80; spring standard patent $3.70; spring first clear $3.20; hard winter short patent $3.80; hard winter 95% patent $3.70; hard winter first clear $3.25; soft winter short patent $4.13; soft winter straights $4.08.

New York: Business extremely dull. Neither sales nor inquiries brisk, current picture unfavorable. Shipping directions slow. Since business usually limited to replacements, a corresponding dullness follows. With chaotic condition at Eastern District Terminal unchanged, still almost impossible to get permits. Trade believes dullness will soon be broken as supplies should be shrinking and buyers will be in for some of their needs. Prices unchanged, except spring clears which show surprising firmness; eastern cake flours scantily offered. Spring high glutens holding up fairly well. On other grades levels are below recent quotations without attracting buying.

Quotations, May 6, spring high glutens $3.80@3.90, standard patents, $3.55@3.70, clears, $3.35@3.65; Kansas high glutens, $3.62@3.75, standard patents, $3.52@3.65, clears, $3.10@3.30; soft winter straights, Pennsylvania, $4.06@4.10, Pacific Coast, $3.77@3.79.

Boston: Sales hard to uncover. In order to get business necessary to accept prices well below ceilings, so that neither mill, buyer nor agent particularly satisfied with commitments. A few sales from buyers operating on a 30-day basis and from occasional fill-in orders. Backlogs of larger buyers reported to have dropped below levels of past months which, with larger quantities being ordered out, indicate possibilities for development of new buying in near future. Trade generally, however, feels that with good reports on new crop prospects, probability is for commitments at lower levels later on. Family in no better demand than bakery types. Directions on old contracts satisfactory. Quotations, May 6: spring high gluten $3.84@3.87, short patent $3.74@3.77, standard patent $3.64@3.67, first clears $3.54@3.57; southwestern short patent $3.74@3.77, standard patent $3.64@3.67; Texas short patent $3.74@3.77, standard patent $3.64@3.67; soft winter patent $4.25@4.27, straights $4.17@4.25, clears $4.07@4.10.

Philadelphia: Not much evidence of any decided improvement in demand; gradually expanding shipping directions reported from some larger operators. With backlogs in some cases dropping below level of recent months considered probable some improved buying interest may develop shortly. Most bakers having covered requirements up to end of present crop season content to remain on sidelines in anticipation of increased wheat receipts. This attitude strengthened by favorable crop reports concerning both Northwest and Southwest areas recently. Most mills experiencing difficulty in obtaining wheat supplies with competition keen from distillers and feed manufacturers; offers small. Undertone about steady; prices show little net change. Quotations May 6: spring wheat short patent $3.68@3.73, standard patent $3.63@3.68, first spring clear $3.40@3.50; hard winter short patent $3.68@3.73, 95% $3.63@3.68, soft winter straights $3.45@3.60.

Pittsburgh: Mills pressing for business. Active solicitation of trade by flour men, but few sales reported. Flour extremely quiet. Unchanged May subsidy considered factor for depression in flour sales. Cash wheat offerings scarce. Chain and retail stores note further contraction of family flour sales. Mixed car lots of flour and grain still attracting buyers eager for feed grains. Bakers clinging to hope of duplicating flour prices of 5 months ago. Firmer tone noted in flour quotations. Shipping directions still lively. Deliveries splendid.

Quotations May 6: hard winter bakers short patent $3.56@3.76, straight $3.50@3.66, high gluten $3.70@3.85, first clear $3.29@3.65; spring wheat bakers short patent $3.60@3.75, standard patent $3.50@3.66, high gluten straight $3.75@3.85, first clear $3.52@3.65; soft winter bakers short patent $4.60@4.83, intermediate $4.15@4.24, straight $3.95@3.99.

THE SOUTH

New Orleans: Market continues dull as buyers hold off pending movement of new crop. Southwestern hard wheat flours in best demand with Northern spring wheat, midwestern and Pacific coast soft wheat flours extremely quiet. Some buying done by chain bakers in anticipation price advance to ceiling in advent of invasion. Prices unchanged. Shipping directions good. Bread and cake sales off. Production of cracker and macaroni normal to good.

Quotations, May 6: hard spring wheat family patent $3.64, first patent $3.44, standard patent $3.34, fancy clear $3.30, first clear $3.25, second clear $3.15; hard winter wheat family patent $3.75, bakers short patent $3.60, 95% $3.50, first clear $3.30; soft wheat short patent $4.40@4.80, straight $3.90@4.10, first clear $3.50@3.70.

Atlanta: Market continues very quiet, with normal fill-in volume to bakers off from recent weeks. Bakers show little interest in May subsidy, generally hesitant about adding to commitments which will take care of them for many weeks. Some mills soliciting business at prices sharply under ceilings, results negligible. Inquiries practically at stand-still. No change in extreme dullness marking family flour sales for past several weeks. Wholesale grocers and jobbers continue well supplied, not interested in adding to commitments or giving shipping directions. Retail stocks not moving. Current buying remains general practice of blenders. Quotations, May 6: spring wheat bakers short patent $3.85@4.02, standard patent $3.78@3.88, straight $3.70@3.85, first bakers clear $3.60@3.75; hard winter bakers short patent $3.70@3.88, standard patent $3.70@3.75, straight $3.65@3.75; family short patent $4.75@5.10, fancy patent $4.35@4.75, special patent $4.15@4.25, low protein 95% $3.75@3.95; soft wheat 95% $4.15@4.35, straight $4.10@4.20, fancy cut-off $3.80@3.90, short patent $4.93@5.20, soft wheat family short patent $4.80@5.10.

Nashville: New sales very light. Buyers' stocks fair; outbound shipments slow. Continued rains seriously delay crop preparation; farmers have not bought spring requirements. Merchants and retailers indicate slight improvement noticed but sales still very light.

Bakers sales lighter. A few larger bakers

GRAIN FUTURES—CLOSING PRICES

Closing prices of grain futures at leading option markets, in cents per bushel:

WHEAT

	Minneapolis		Chicago		Kansas City		Seattle		Duluth	
	May	July	May	July	May	July	May	July	May	July
May 3	165⅝	165⅝	173⅜	170½	163½	161½	152	....	165⅞	164⅝
May 4	165⅝	165⅝	173⅜	170⅛	163½	161¾	152	....	165⅞	164⅝
May 5	165⅝	166⅜	173⅜	169⅞	163½	161¾	152	....	165⅞	164⅝
May 6	165⅝	165⅝	173⅜	169⅞	163½	161¾	152	....	165⅞	164⅝
May 8	165⅜	165⅜	173	170	163½	161⅞	152	....	165⅞	164⅝
May 9	165⅝	165⅝	173⅜	169⅝	163½	161⅝	152	....	165⅞	164⅝

	CORN				OATS			
	Minneapolis		Chicago		Kansas City		Chicago		Minneapolis	
	May	July	May	July	May	July	May	July	May	July
May 3	....	....	....	....	....	....	82	79	79	77¼
May 4	....	....	....	....	....	....	82	79¼	79	77⅝
May 5	....	....	....	....	....	....	82	79⅛	79	77⅝
May 6	....	....	....	....	....	....	82	78⅝	79	77⅛
May 8	....	....	....	....	....	....	82	79¼	79	77⅜
May 9	....	....	....	....	....	....	82	79⅜	79	77¼

	RYE				FLAXSEED				BARLEY	
	Chicago		Minneapolis		Minneapolis		Duluth		Minneapolis	
	May	July	May	July	May	Sept.	May	July	May	July
May 3	131⅛	128¼	124⅛	122½	301	305	301	305	116	....
May 4	132⅜	128⅞	124¾	123⅛	301	305	301	305	116	....
May 5	130⅛	127⅞	123¾	122⅞	301	305	301	305	116	....
May 6	127⅞	126	121¾	120½	301	305	301	305	116	....
May 8	129½	127	123¼	121⅝	301	305	301	305	116	....
May 9	127⅞	126⅞	122¼	120⅞	301	305	301	305	116	....

SUMMARY OF MILLFEED QUOTATIONS

Week-end millfeed quotations, summarized from the market reviews, are based on carload lots, prompt delivery, per ton, packed in 100-lb sacks, f.o.b. at indicated points:

	Chicago	Minneapolis	Kansas City	St. Louis	Buffalo
Spring bran	$....@40.40	$....@37.75	$....@....	$....@....	$....@41.65
Hard winter bran	....@40.40	....@....	36.50@37.00	38.97@39.47	....@....
Standard middlings*	....@40.40	....@37.75	....@....	38.97@39.47	....@41.65
Flour middlings†	....@40.40	....@37.75	36.50@37.00	38.97@39.47	....@41.65
Red dog	....@40.40	....@37.75	....@....	....@39.47	....@41.65

	Baltimore	Philadelphia	Boston	Cincinnati	Nashville
Spring bran	$....@....	$....@45.34	$....@46.17	$....@....	$....@....
Hard winter bran	....@....	....@45.34	....@....	....@....	....@....
Soft winter bran	....@....	....@....	....@....	....@....	43.30@44.30
Standard middlings*	....@....	....@45.34	....@46.17	....@....	....@....
Flour middlings†	....@....	....@45.34	....@46.17	....@....	43.30@44.30
Red dog	....@....	....@45.34	....@46.17	....@....	....@....

	Spring bran	Shorts	Middlings
Toronto	$....@29.00	$....@30.00	$....@33.00
‡Winnipeg	....@28.00	....@29.00	....@....

*Brown shorts. †Gray shorts. ‡Fort William basis.

A SUMMARY OF FLOUR QUOTATIONS IN LEADING MARKETS

Week-end flour quotations, per sack (cwt), packed in 100 lbs. (Canadian quotations per bbl of 196 lbs.) All quotations on basis of carload lots, prompt delivery.

	Chicago	Minneapolis	Kansas City	St. Louis	Buffalo	New York	Baltimore	Philadelphia	Boston	Cincinnati	†Nashville
Spring first patent	$3.30@3.57	$....@3.44	$....@....	$....@3.52	$....@3.80	$3.80@3.90	$....@....	$3.68@3.73	$3.74@3.77	$....@....	$....@....
Spring standard patent	3.20@3.47	....@3.34	....@....	....@3.42	....@3.70	3.55@3.70	....@....	3.63@3.68	3.64@3.67	....@....	....@....
Spring first clear	2.75@3.45	3.20@3.24	....@....	....@....	....@3.20	3.35@3.55	....@....	3.40@3.50	3.54@3.57	....@....	....@....
Hard winter short patent	3.45@3.57	....@....	....@3.30	....@3.53	....@3.80	3.62@3.75	....@....	3.68@3.73	3.74@3.77	....@....	3.70@3.77
Hard winter 95% patent	3.32@3.47	....@....	....@3.25	....@3.42	....@3.70	3.52@3.65	....@....	3.63@3.68	3.64@3.67	....@....	3.65@3.70
Hard winter first clear	2.65@3.20	....@....	2.55@2.75	2.68@3.06	....@3.25	3.10@3.30	....@....	....@....	....@....	....@....	....@....
Soft winter short patent	4.06@4.72	....@....	....@....	....@3.98	....@4.13	....@....	....@....	4.25@4.37	....@....	5.05@5.10	5.05@5.00
Soft winter straight	3.50@4.54	....@....	....@....	....@3.74	....@4.08	3.77@4.10	....@....	*3.45@3.60	4.17@4.25	....@....	4.95@5.00
Soft winter first clear	3.35@3.60	....@....	....@....	3.32@3.75	....@....	....@....	....@....	....@....	4.07@4.10	....@....	....@....
Rye flour, white	3.30@3.58	2.40@2.46	....@....	....@3.80	....@3.80	3.65@3.73	....@....	3.65@3.80	....@....	....@....	....@....
Rye flour, dark	2.80@3.30	2.99@3.06	....@....	....@3.25	....@3.30	....@....	....@....	....@....	....@....	....@....	....@....

	Seattle (98's)	S. Francisco	Standard patent—	Seattle	San Francisco		Toronto	**Winnipeg		Toronto	**Winnipeg
Family patent	$....@....	$....@....	Dakota	$....@....	$....@....	Spring top patent‡	$....@5.05	$....@5.30	Spring exports‡	$9.40	....
Pastry	....@....	....@....	Montana	....@....	....@....	Spring second pat.‡	....@4.40	....@4.80	Ont. 90% patents‡	5.60	....
						Spring first clear‡	....@3.80	....@....			

*Includes near-by straights. †Nashville prices basis f.o.b. Ohio River points for soft winter wheat flour. **In cottons, Fort William basis. ‡Second-hand jutes. §98-lb jutes. ¶280-lb cottons.

booked a little flour; large bookings entirely absent. Shipping directions on older contracts fair. Prices unchanged.

Quotations, May 6: soft wheat bakers short patent $5.05@5.10; standard patent $4.95@5; hard wheat bakers short patent $3.70@3.77; standard patent $3.65@3.70; soft winter wheat family short patent $5@5.10; standard patent $4.85@5; straight $4.70@4.85; clears $4.50@4.65.

PACIFIC COAST

Seattle: Markets show slight improvement. Increase of 2c subsidy little effect as local cash wheat market has advanced to more than offset any benefit of subsidy. Some flour booked since increase but not volume expected. Mills doing better in grinding, shipping instructions improved to point some mills operating at near capacity levels.

Portland: Rise in subsidy of 2c to 26c has not helped flour sales in this territory. Mills report very light market, with buyers staying out, few new bookings. Interior mills in little better shape, some government flour ordered ground and sent to terminals. Terminal mills not getting these orders, domestic trade not large enough to sustain milling operations on a large scale. Until government orders these bookings out, coast mills do not anticipate much of a grind. Few army and navy orders unfilled, bakery trade has some bookings, but new ones scarce.

Quotations, May 6: All Montana high gluten $3.62, bluestem topping $3.40, cake $3.91, pastry $3.08, pie $3.08, fancy hard wheat clears $3.46, whole wheat, 100% $3.49, graham $3.15, cracked wheat $3.15.

CANADIAN MARKETS

Toronto-Montreal: Domestic business in spring wheat flour steady with little interest in forward buying. Volume above normal. Export trade substantial, bookings mostly mutual aid business with West Indies. Milling capacity of Canadian plants booked up until end of July. Domestic prices at ceiling, U. K. price stabilized. Quotations, May 6: domestic, top patents $5.05 bbl, seconds $4.40, bakers $4.30, in 98's cotton, mixed cars, track, Toronto-Montreal freights, add 10c extra where cartage is performed. For export, government regulation flour, $9.40 per 280 lbs, f.a.s., winter ports, June-July seaboard.

Supplies of winter wheat flour curtailed by scarcity of wheat for grinding. Quantity of flour offering far short of requirements. Biscuit and pastry manufacturers forced to use springs. Price controlled by ceiling. Quotations, May 6: $5.60 bbl for pure Ontario winters, second-hand jutes, Montreal freights.

Offerings of winter wheat limited. Most farm stocks cleaned up. Ceilings prevail. Quotations, May 6: $1.12 @ $1.14 bu, f.o.b., shipping points, according to freights.

Winnipeg: No indication of export demand for Canadian flour, no sales reported. Domestic demand good, mills operating at capacity. Quotations, May 6: top patent springs for delivery between Fort William and the British Columbia boundary, $5.30, cottons; seconds, $4.80; second patents to bakers, $4.60.

Vancouver: Little change in hard wheat flour picture. With western mills finding it increasingly difficult to take care of war orders in addition to civilian requirements and no ocean-going tonnage available for any export business, export interest remains at extremely low ebb.

Hard wheat flour demand for domestic trade steady. Prices holding at ceiling levels, dealers' stocks fairly good. Cash car quotations on the base of 98's cottons are $5.40 for top patents, $5 for bakers or second patents and $4.90 for Vitamin B.

Soft wheat flour picture extremely critical. Little Ontario flour available quoted at ceiling price of $7.50.

MILLFEED MARKETS

Minneapolis: Scarcity of millfeed more pronounced, impossible for millers to keep pace with demand; daily production absorbed as made.

Oklahoma City: Steady demand, small offerings. Prices unchanged. Southern deliveries: bran, mill run and shorts $1.90@1.95 cwt; northern deliveries: bran, mill run and shorts $1.85@1.90.

Wichita: Supply far below demand; basis Kansas City: $36.50.

Hutchinson: Demand insistent; trend firm; supply adequate; bran, mill run, gray shorts $36.50@37.50 (Kansas City basis).

Fort Worth: Supply inadequate. Mills using production to supply mixed car trade with flour and in their own mixed feeds; practically no carlot offerings in open market. Wheat bran and gray shorts $43.20, in mixed cars.

Chicago: No offerings; all grades $40.40, jobbers' ceiling price.

Toledo: No change, none expected until conditions change. Still allocating feed at ceilings.

Buffalo: Wheat feeds because of scarcity of other feedstuffs and low production in proportion to demand, remain scarce and hard to get, far below demands of the trade. Trend firm; supply very light. Quotations: all varieties $41.55, Buffalo, straight carlots.

New York: Supply critically scarce; $46.06.

Boston: Supply situation not relieved though feeders' position somewhat better with improved pasturage. Mill offerings continue light, deliveries backward. While government allocations of wheat feed for May are expected to equal or exceed those for April, favorable factors are not expected to relieve heavy demand. Standard bran, midds, mixed feed and red dog $46.17.

Philadelphia: Demand moderate; trend firm; supply small. Quotations: bran std. pure spring and hard winter $45.34; soft winter nominal; midds. std., flour and red dog $45.34.

Pittsburgh: First clears sought for mixes. Oats not available, orders placed for large quota Canadian oats. Split cars rare, eagerly bought up. On southwestern and northwestern bran, shorts, middlings and red dog quotations stationary, nominally quoted at $44.10@44.60.

Atlanta: Situation increasingly tight with very limited offerings, these in mixed cars with flour; some local mill-door deliveries; feedstuffs increasingly scarce with demand more urgent as result of shortage of feed grains: bran and gray shorts continue at ceilings of $46.30@46.80, ground feed wheat $52.50, ground oats $75.50@77.00.

Nashville: Demand still exceeds supply. Excessive moisture makes pasture grass watery and poor food for livestock. Farmers and feeders having to feed stock any kind of feed available. Bran and shorts (ceilings) $43.30@44.30.

Seattle: Supply limited. $36.50.

Portland: Millrun, bran, shorts, midds, Plants have resumed six-day per week operations with shipments excellent. Quotations: (unchanged, ceiling): red bran and mill run $36.30, blended $36.30, white $36.30, midds $36.30, carload lots, f.o.b., Ogden. Denver prices: (ceiling). red bran and mill run $38, blended $38, white $36, midds $38 per ton, ceiling. California prices; (ceiling): red bran and mill run $42.08, blended $42.08, white $42.08, midds $42.08, carlots, f.o.b., San Francisco, with Los Angeles prices up $1, ceiling.

Ogden: Business steady, with demand exceeding supply, movements improved. $36.50 ton.

Los Angeles: Supply scarce; Kansas bran $47.50

Toronto-Montreal: Demand far ahead of supply. Scarcity of other feeds and the relative low ceiling on millfeed accounts for popularity. Exports at low point. Quotations: domestic ceiling, bran $29, shorts $30, midds $33 ton, net cash terms, bags included, mixed or straight cars, Montreal freight basis; export, Boston ceiling, $45.50 ton for splits, Montreal freights, Canadian funds.

Winnipeg—Excellent demand; all western supplies moving to eastern Canada. Quotations: bran $28, shorts $29, Man. & Sask.; Alberta bran $25.50, shorts $26.50; small lots ex-country elevators and warehouses $3 extra.

Vancouver: Trend steady. Domestic demand continues exceptional. Strong prospect that demand will even become greater before it declines due to sharp increases in poultry flocks. Supplies becoming somewhat tighter with western mills showing less desire to offer or accept forward bookings. Situation largely result of opening of navigation on lakes and fact that eastern buyers have let their stocks drop fairly low in anticipation of low lake freights against the higher rail movement. Prices firm at ceiling levels, cash car quotations: bran $29.80; shorts $30.80 with midds $33.80.

OATMEAL MARKETS

Toronto-Montreal: Mills operating on recent British orders. Domestic business light. Quotations, May 6: rolled oats $3.15 bag of 80 lbs, cotton, in mixed cars; oatmeal, in 98's jute, $3.85 bag, f.o.b., Toronto or Montreal.

Winnipeg: Demand for rolled oats and oatmeal slow. Mills operating only part time, no accumulation of supplies. Quotations, May 6: rolled oats, in 80-lb sacks, $3.25 in three prairie provinces; oatmeal, in 98-lb sacks, 20% over rolled oats.

Minneapolis: Rolled oats were quoted on May 8 at $6.30 per 100 lbs, bulk; 20-oz packages $2.59 case, 48-oz packages $3.82.

Flaxseed Receipts, Shipments and Stocks

Receipts, shipments and stocks of flaxseed at principal primary points for the week ended May 6, in thousand bushels, with comparisons:

	Receipts		Shipments		Stocks	
	1944	1943	1944	1943	1944	1943
Minneapolis ..	113	123	28	56	1,466	790
Duluth	8	17	262	168	1,696	753

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Quality Millers *for*
Over Half a Century
Domestic and Export DOVER, OHIO

The BEARDSTOWN MILLS
SPRING WHEAT
KANSAS WHEAT
SOFT WHEAT
FLOURS
CRITIC FEEDS
SCHULTZ, BAUJAN & CO.
BEARDSTOWN, ILLINOIS

WANT ADS

Advertisements in this department are 5c per word; minimum charge, $1. (Count six words for signature.) Situation Wanted advertisements will be accepted for 2½c per word, 50c minimum. Display Want Ads $4 per inch per insertion. All Want Ads cash with order.

HELP WANTED

We Need a
SOUTHEASTERN
SALES DIRECTOR

● One of the larger Southwestern milling organizations has an opening for office sales director for the Southeastern field. Successful applicant must be experienced, know the trade and have a clear record. We have established no reasonable limit on what we might pay for the right man. Correspondence absolutely confidential. Address: 6742, The Northwestern Miller, 612 Board of Trade Bldg., Kansas City 6, Mo.

HEAD MILLER WANTED. ONE WHO understands corn milling. In reply, give full particulars. Address 6744, The Northwestern Miller, Minneapolis 2, Minn.

EXPERIENCED SALESMAN WANTED for Arkansas; splendid opportunity for right man. Address Standard Milling Co., 309 West Jackson Blvd., Chicago 6, Ill.

AGGRESSIVE SALESMAN WANTED FOR Indiana, resident of state preferred. Contact Standard Milling Co., 309 W. Jackson Blvd., Chicago 6, Ill.

CHEMIST WANTED FOR CONTROL work in large mill. When replying, give full particulars. Address 6745, The Northwestern Miller, Minneapolis 2, Minn.

MILLWRIGHT OR CARPENTER. STEADY work now and after duration, plenty overtime, favorable living conditions. Write Harry Johnson, Superintendent, Midland Mills, Blackwell, Oklahoma.

WANTED: ASSISTANT BAKESHOP SUperintendent for an exclusive pie plant located in the middle west. Previous experience in pie manufacturing not essential; but applicant must have experience in cake production. This is a splendid opportunity for a permanent position for the right man. Apply, giving age, education, past experience and salary expected. Address: 6749, The Northwestern Miller, Minneapolis 2, Minnesota.

WE HAVE AN OPENING FOR A SECOND miller and will give consideration to anyone with mill experience but not actual milling who feels qualified and ambitious to learn the millers' trade. Steady work now and after the duration, plenty of overtime, good working and living conditions, group insurance and many advancement opportunities. Write Harry Johnson, Superintendent, The Midland Flour Milling Company, Newton, Kansas.

HELP WANTED

CHEMIST WANTED — EXPERIENCED, fully qualified man capable of taking full charge of laboratory for modern Kansas mill. Address 6755, The Northwestern Miller, 612 Board of Trade Bldg., Kansas City 6, Mo.

TRAVELLING BROKERS WANTED—FOR E. Tenn., Georgia, Alabama, by mill with straight and mixed cars of soft and hard wheat flours. Write fully territory now cover, class of trade, what accounts now have. Address: 6754, The Northwestern Miller, 612 Board of Trade Bldg., Kansas City 6, Missouri.

SITUATIONS WANTED

SOY BEAN ENGINEER NOW AVAILABLE, capable of designing, building, and operating mill for the manufacturing of full fat soy flour. Address 6748, The Northwestern Miller, Minneapolis 2, Minn.

POSITION WANTED AS SHIPPING CLERK in well established mill by married man, draft exempt, experienced through the mill. Give full particulars in first letter. Address 6737, The Northwestern Miller, Minneapolis 2, Minnesota.

HEAD MILLER, WITH KNOWLEDGE considerably above average and ability to prove it, open for permanent employment; now in Minneapolis; skilled in reflowing, maintenance, close yields, low ash flours, feeds, etc. Address: 6751, The Northwestern Miller, Minneapolis, Minn.

SALES DIRECTOR: FIFTEEN YEARS experience in family and bakers flour sales, manager packaged goods department with thorough knowledge cereal sales, promotion and advertising. Young, aggressive, competent. Excellent references and reasons for wishing change. Address: 6752, The Northwestern Miller, Minneapolis 2, Minnesota.

MACHINERY WANTED

WANTED—BRIGHTWOOD BOX MACHINE —Pneumatic scale packaging machine; two flour blenders. Address 4970, The Northwestern Miller, Minneapolis 2, Minn.

Milling Executives

Is your bookkeeping work spread out over the month or is the load accumulated to the end of the month when everybody is busiest? Are your operating statements ready by the fourth working day of the new month? They can be, maybe earlier. Ask us.

Write for full information.

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Management Counsellors
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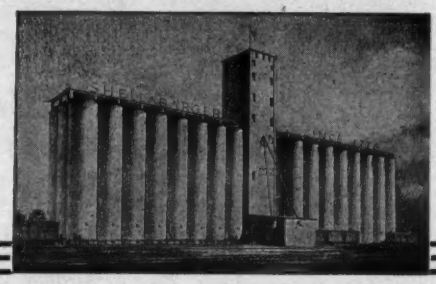
SALINA, KANSAS



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A very fine, strong, altogether uniform and dependable flour

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STERLING, KANSAS

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From Selected Spring Wheat

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APEX—Fancy Clear
RED INDIAN—First Clear

Try our high protein spring wheat Graham and Whole Wheat flours, Farina and Pure Wheat Germ.

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"Very Best"
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W. J. JENNISON CO.
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SECURITY FLOUR MILLS CO.
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SUPERIOR QUALITY
to Make All Baked Things Better
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FOR QUALITY, FLAVOR AND ECONOMY
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Dependable Hard and Soft Wheat Bakery and Family Flours
SAXONY MILLS
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FAMILY PATENTS
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ROYAL FLUFF-EAT-A

It pays to pick the right cake flour! Average flours really cost more than top quality flours like ROYAL FLUFF-EAT-A, which produces more finished cake per pound of flour. You get a richer, moister, longer-keeping cake with ROYAL FLUFF-EAT-A.

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DOBRY FLOUR MILLS, Inc.
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Manufacture Kiln-Dried WHITE CORN PRODUCTS
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2010 Taney Ave. No. Kansas City, Mo.

"THERE WAS GOOD WHITE BREAD"

* * * * * *

Day-to-Day War Reports Reveal Bread Value

WHEN this war is over and our soldiers return to their homes, we are going to hear more of the importance of good enriched white bread and the part it plays in our American way of life, an article in Food Facts, a bulletin published by the Wheat Flour Institute, stated recently. Poets have glorified bread. Authors have written about it. Nutritionists have praised it. None of their words have appraised its values so simply or so completely as have war reporters in their day-to-day stories from the front. These men, perhaps unknowingly, have set out impressions of human reactions that show the intrinsic value of bread. When we read these reports we realize how deep is the desire to have white bread—not the black bread of poorer nations, nor any kind of mixed "wartime loaves."

Frank Gervasi, Collier's correspondent, recently wrote from the Italian front:

"The presence of the French has given this front a certain oomph it lacked. A dash of Gallic was just what the Fifth Army needed. They can make Spam into something Oscar of the Waldorf would sniff with respect.

"Their officers' mess made up what it lacked in comfort, with good food that was simple but satisfyingly seasoned. There was a soup course and a meat course with potatoes, and there was good white bread and wine. Then we had fruit—invariably oranges. Before we sat to eat the mess sergeant announced the bill of fare and wound up with 'Bon apetit, Messieurs. Bon apetite.'"

H. R. Knickerbocker, chief of the Chicago Sun Foreign Service, reporting from the same front, said:

"The kitchen is safely back at the rear, where cooks can give undivided attention to their task. Food is then packed in big vacuum containers and distributed up and down the line. This enables the troops to get hot food at places it would be impossible to have fires.

"Today for breakfast, we had oatmeal with sugar and cream, bacon and white bread and gravy, and all the coffee anybody could drink. For lunch we had Vienna sausages baked with catsup and onions, creamed peas and carrots, bread, apple butter and cold lemonade, and tonight we are having hot corned beef patties, lima beans cooked with bacon, chocolate pudding, bread and hot coffee."

United Press reported from Naples, on Oct. 10, 1943, that: "The first white bread sold in Naples since 1940 went on sale in bakeries today, and Italian housewives showed their appreciation by kissing Doughboys and Tommies who happened by. The bread, baked with American flour provided by AMG, sold at 2c for a small loaf."

In February, Associated Press reported from Naples, that arrivals of 70,000 tons of flour, sugar, milk and other foodstuffs and medical supplies at Italian ports during January had made possible a larger bread ration and relief from famine was assured. The bread ration in liberated areas of Italy was increased from 4.4 oz to 7 oz daily per person.

While reports from the fighting front and from liberated areas indicate a real appreciation of white bread and white flour, none are quite as impressive as the expressions from those who have been repatriated from Japanese internment camps. Shelley Smith Mydans, Life reported, who returned on the Gripsholm recently, said:

"Every one of us had a two-year hunger to appease and as the stewards set four long tables on the decks with smorgasbord, crowds of men and women, trying to hide the yearning in their eyes with grins and jokes, grouped around and cheered each new dish that was brought out.

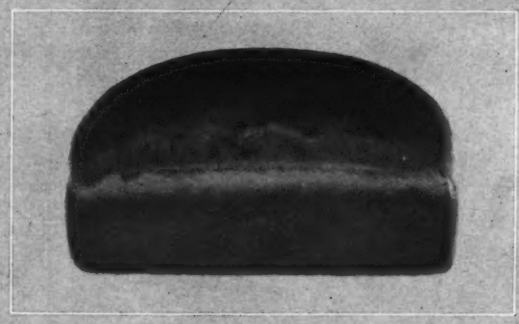
"The tables when fully set epitomized the dreams of all internees in East Asia. We are all pastmasters at describing food; it has been one of our chief topics of conversation all these months. But none of us could have dreamed up a better meal than the first that was served us here. We had white bread, butter, cheese, vegetable salad, cold meats, olives, pickles, tomato juice, iced tea—all luxuries we hadn't seen for months.

"Our shrunken stomachs are easily satisfied, as are our hearts. They were both filled to discomfort—by a little bit of food and the feeling that we were welcome."

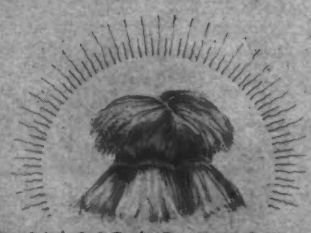
One of the most touching stories of the war front is one that was broadcast about the South Pacific area. A squadron leader reported that he was with troops operating many miles behind the Jap lines. Their equipment had been packed in, including a wireless set carried on muleback. Orders for supplies

Be Proud of Your Job,
As We are of Ours...

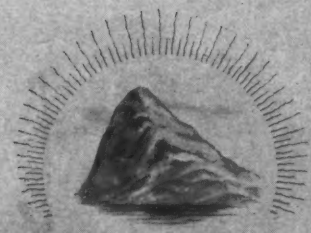
for



Bread is the Staff of Life



KANSAS BEST
FLOUR



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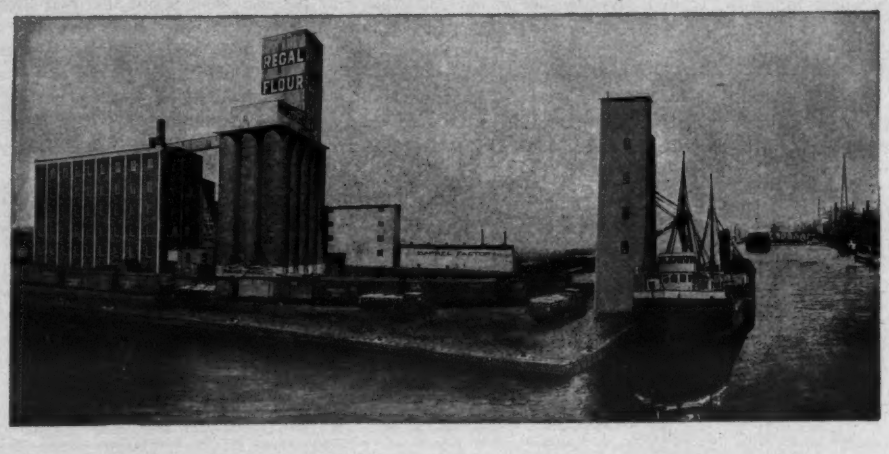

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450 Elevators in Manitoba, Saskatchewan and Alberta.
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CABLE ADDRESS: LAKURON — TORONTO, CANADA

SPECIALISTS IN MILLING

PURITY THREE STARS

STERLING CANADA CREAM

GREAT WEST • BATTLE • MAITLAND • HURON

All Western Canada Hard Wheat Flours

FLOUR MILLING CAPACITY 9,500 BBLS DAILY

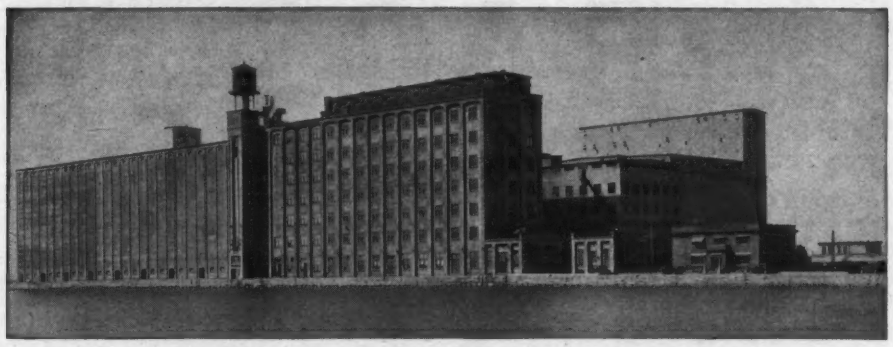
ROLLED OATS AND OATMEAL 400 BBLS DAILY

UNIFORM QUALITY GUARANTEED

CANADA'S LARGEST FLOUR EXPORTERS

Head Office— Toronto, Ontario

Cable Address— "Mapleshaw," Toronto, Canada



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CHOICEST CANADIAN *Hard Spring Wheat*

and perfect milling facilities have placed our products in the van.

BRANDS

"VICTORY" - "PRAIRIE BLOSSOM"
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THE DOMINION FLOUR MILLS, LTD.

Cable Address: "DOMFLOUR" MONTREAL, CANADA

QUALITY UNIFORMLY MAINTAINED SINCE 1887

Lake of the Woods Milling Co., Limited

Cable Address
"HASTINGS"
Montreal

ALL
CABLE CODES
USED

Makers of CANADIAN HARD SPRING WHEAT *Flour*

Owning and Operating
Wheat-Receiving Elevators in Manitoba,
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Mills at
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IN CANADA

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Since 1857
James Richardson & Sons
LIMITED
Grain Merchants Shippers and Exporters
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Export Offices - MONTREAL and VANCOUVER
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LIMITED
C A N D
Grain and Feeds
Exporters
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TORONTO ELEVATORS
LIMITED
Grain and Feed
Merchants
4 Million Bushel Elevator—Toronto
3 Million Bushel Elevator—Sarnia
TORONTO, CANADA

THE MAIN LINK
JUTE BAGS COTTON
BAKERY
WOODS MANUFACTURING CO., LTD.
MONTREAL - TORONTO - WINNIPEG

were transmitted in code. Transport planes flew the food and supplies to this group of soldiers. The men in one of the outfits, tired of the daily routine of eating biscuits, sent out a message reading, "Oh, Lord, please send us bread." Sure enough, some hours later a transport plane roared overhead and down floated several hundred pounds of fresh bread. Then they received a message over their wireless saying, "The Lord has answered your prayers." It happened that the supply officer back at the base was named Capt. Lord.

The soldiers who now have to live on rations with substitutes for the good white bread they are accustomed to at home, will have to do as Mrs. Winston Churchill is doing. After her visit to this country last fall she said, "I thought I liked black bread in England—until I came here and ate the white, but now I'll go back and pretend to enjoy the black."

Some day soon we will win this war and the right to have good white bread without any pretending.

——BREAD IS THE STAFF OF LIFE——

LOWER FEED GRAIN RATE IN WESTERN SECTION CONTINUED

WASHINGTON, D. C.—The Interstate Commerce Commission has instructed carriers to continue present temporarily reduced rates on coarse grains in certain specified areas of several western states until Jan. 1, 1945, pending working out of a modified permanent adjustment to fit the needs of traffic in that area and eliminate as far as possible the rate discrepancy between coarse grains and wheat in the territory.

The rates were reduced originally in 1942 on corn, oats, barley and sorghum grains between certain specified areas in Iowa, Minnesota, South Dakota, Missouri, Kansas, Nebraska, Colorado and Wyoming to make it possible for rail lines to compete with severe truck competition.

Return to normal rates now would be unreasonable, the commission ruled, reversing an earlier stand.

——BREAD IS THE STAFF OF LIFE——

DU PONT OFFICERS RE-ELECTED

WILMINGTON, DEL.—At a directors' meeting held here April 17, Lammot du Pont was re-elected chairman of the board of E. I. du Pont de Nemours Co., and Walter S. Carpenter, Jr., president. The vice presidents, treasurer and secretary were also all re-elected. Earnings of $1.38 a share on the common stock for the three months ended March 31, were reported, compared with $1.16 for the corresponding period last year.

——BREAD IS THE STAFF OF LIFE——

SCHUMACHER FLOUR & FEED CO. SOLD

PORT WASHINGTON, WIS.—The Frank Schumacher Flour & Feed Co., operated in recent years by Frank Schumacher, has been purchased by Fred Blank, who has been associated with the Cedarburg Supply Co. for the past 13 years. The business was founded by Mr. Schumacher's father.

——BREAD IS THE STAFF OF LIFE——

JOHN LINDEN PROMOTED

OMAHA, NEB.—John Linden, territory salesman for Omar Mills, Inc., Omaha, has been appointed district sales manager. The change in status became effective May 1, according to N. D. Stringer, general sales manager.

PICK THE FLOUR THAT FITS YOUR NEED!

▲ OCCIDENT
▲ PRODUCER
▲ SUNBURST
▲ SWEET LOAF
▲ KYROL
▲ POWERFUL

THERE'S A RUSSELL MILLER FLOUR FOR EVERY BAKING PURPOSE

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—A very fine, short, strong patent milled in one of the West's very finest flour mills.
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Pure Soft Winter Wheat Flour
GREENSBURG, IND.

The Wamego Milling Co.
WAMEGO, KANSAS
Millers of Kansas Hard Wheat Flour
HIGH CLASS BROKERAGE CONNECTIONS DESIRED

"Golden Loaf" That's Our Brand—
The Flour with the Doubt and Trouble left out
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Lake City, Minn.

BY APPOINTMENT TO HIS LATE MAJESTY KING GEORGE V.

Canada's oldest and largest Millers

BRANDS:

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"ROYAL HOUSEHOLD"
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"BUFFALO"

Cereals
"OGILVIE OATS"
"WHEAT HEARTS"
"OGILVIE BLENDIES"

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Successors to Wolverton Flour Mills Co., Ltd.
Canadian Spring and Winter Wheat Flour
"SILVERKING" "GREAT STAR" "WOLF" "KEYSTONE"
Cable Address: "WOLMAGS" ST. MARY'S, ONTARIO, CANADA

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WINNIPEG • VANCOUVER
Successors to
THE CANADIAN BAG CO. LIMITED OF WINNIPEG & VANCOUVER
and
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Manufacturers and Importers
COTTON BAGS
BAG
JUTE BAGS
BURLAPS AND TWINES
Paper Bags for Sugar, Cereals, etc., manufactured at Vancouver plant

Since 1882

FLOUR

BIG JO

GRIST OF GRINS

KING'S ENGLISH

A young hillbilly was taking his physical examination upon entering the army.

Doctor—How are your adenoids?

Young Man—They didn't give me any.

Doctor—No, no! I mean are you constricted?

Young Man—No. I enlisted.

Doctor—Good grief, man! Don't you know the king's English?

Young Man—The devil he is!

HE'LL LEARN

"How come you didn't turn out?" demanded the sergeant. "Didn't you hear the bugle blow reveille?"

"Honest, sergeant, I'm afraid I'm going to be a flop as a soldier. I don't know one dern tune from another!"

SEVEN INTO FIVE

"She is a woman who has gone through a great deal for her belief."

"Indeed? What is her belief?"

"She believes she can wear a No. 5 shoe on a No. 7 foot."

MISUNDERSTOOD

An elderly woman, who is treasurer of a local ladies' aid society, went into a bank the other day to deposit the organization's funds. She handed the money over to a hard-of-hearing teller with the casual remark that it was "the aid money."

The teller thought she said "egg money" and wanted to compliment her on the organization's endeavor.

"Remarkable," he said, "isn't it, how well the old hens are doing these days."

The lady left with a frown.

AGREED!

A small boy in the visitors' gallery was watching the proceedings of the Senate chamber.

"Father, who is that gentleman?" he asked, pointing to the chaplain.

"That, my son, is the chaplain," replied the father.

"Does he pray for the senators?" asked the boy.

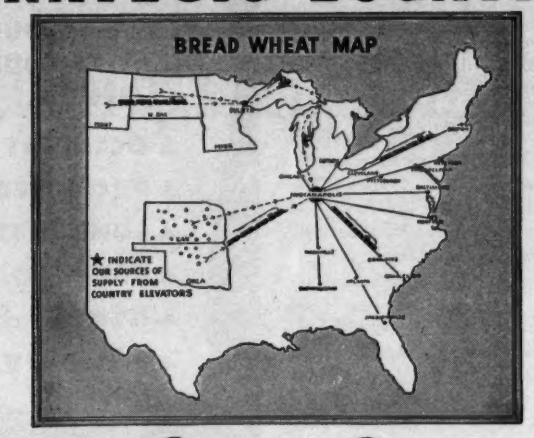
The father thought a moment and then said, "No, my son, when he goes in he looks around and sees the senators sitting there, and then he prays for the country."

FIRST AID

She was on her way home from a first aid course when she saw a man lying prone in the middle of the sidewalk. His face was cradled on one arm; the other arm was twisted under him in a peculiar position. Without a moment's hesitation she got down on her knees and went to work.

"Lady," said the victim after a few moments, "I don't know what you're doing, but I wish you'd quit tickling me. I'm trying to hold a lantern for this fellow down in the manhole."

STRATEGIC LOCATION



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Coast To Coast Grain Service
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INCORPORATED
Minneapolis and
All Principal Grain Markets

WHEAT
WINTER
SPRING
DURUM
• • •
By the
TRUCK-LOAD
CAR-LOAD
BOAT-LOAD
• • •
Any Where
Any Time

Wisconsin Rye Flour
for Performance and Satisfaction
Distinctive Quality and Flavor
EXCLUSIVE MILLERS OF RYE FLOUR
GLOBE MILLING CO.
WATERTOWN, WIS.
"WISCONSIN MAKES THE BEST RYE FLOUR"

"ROCK RIVER" RYE "OLD TIMES" BUCKWHEAT
"BLODGETT'S"
RYE
All Grades—From Darkest Dark to the Whitest White
—Specially Milled by the Blodgett Family—Since 1849
FRANK H. BLODGETT, Inc., Janesville, Wisconsin

CONTINENTAL GRAIN CO. MILLING WHEAT FROM EVERY PRODUCING SECTION OF THE UNITED STATES

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Kansas City	Galveston	Kansas City	Minneapolis	Portland
Omaha	Enid	St. Louis	Davenport	San Francisco
Toledo		Omaha	Buffalo	Vancouver, B. C.
		Columbus	Cedar Rapids	Winnipeg

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Millers of Hard and Soft Wheat Flour
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Just always GOOD FLOUR
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Flour from this mill comes to you fully aged — ready to use
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Our mill is located in the high protein wheat district of central western Kansas, and secures most of its wheat directly from growers.
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How to "fix" a parking ticket

Well, you *did* over park, didn't you?

OK, march down and pay the desk sergeant a dollar.

Oh—you left your car for exactly 48 minutes, no more, no less? Then fight it, man — there's a principle at stake. Demand a jury trial, bring along your witnesses, tell your story. Take it through to the highest court in the land.

You can, you know. How trivial the offense makes no difference. Only, if this were not a free country, you'd slink along under a different standard. It's "trivial" to listen to foreign broadcasts—but in France they shoot you for it. It's "trivial" to criticize the Government—unless you're in Holland where loose talk means the concentration camp.

Don't roar with anguish the next time you get a ticket. Instead, thank your stars for courts where you can say your say and see justice done. That's one thing this war is about.

We are fighting not so much to protect our free institutions, as to let *them* protect *us*. They enable us at General Mills to direct our research where we will, to manufacture what we choose, to give our most conscientious effort to the big job of feeding the nation.

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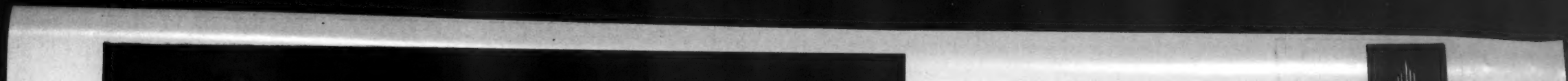
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